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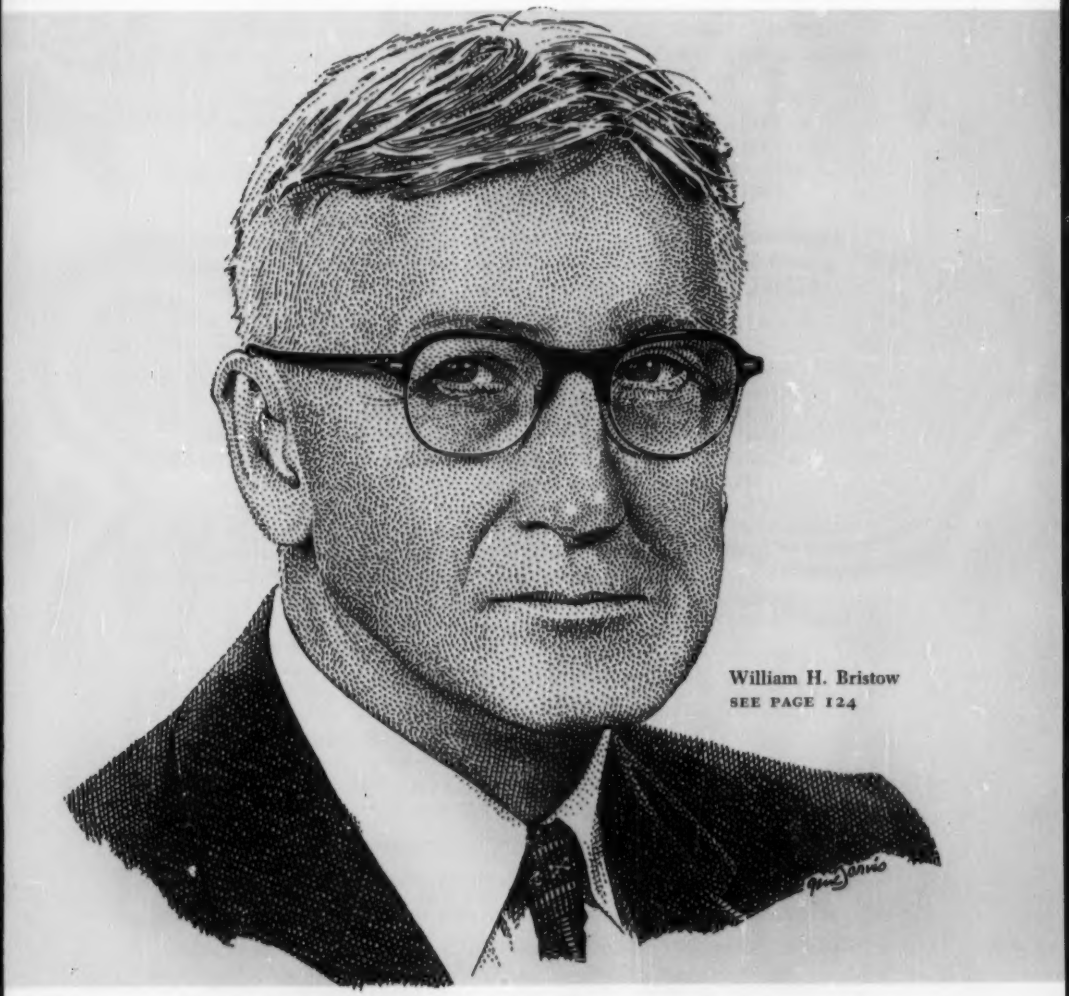
EDUCATION



William H. Bristow
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OUR EIGHTY-FIRST YEAR of PUBLICATION
VOLUME 81 . . . . . NUMBER 2

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Devoted to the Science, Art, Philosophy, and Literature of Education

THE WHITE HOUSE

(Newport, Rhode Island)

A PROCLAMATION

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

WHEREAS the American system of free public education, recognizing the supreme importance of the individual and his right to develop his capacities to the full, has created a virile and powerful society of responsible citizens; and

WHEREAS this educational system is a means for preserving the most precious heritage of our land and a basic requirement for further social and economic advances; and

WHEREAS, through the benefits of education, the peoples of the world have entered a new age which can open up an intensified attack on the ancient ills of poverty, disease, and ignorance and which can harness the energies of mankind for a better way of life for all; and

WHEREAS it is imperative that we continue to lead in this age by building on the accomplishments of the past so that our educational system will adequately prepare our children for the responsibilities of the future:

NOW, THEREFORE, I, DWIGHT D. EISENHOWER, President of the United States of America, do hereby designate the period from November 6 through November 12, 1960, as American Education Week; and I urge citizens throughout the Nation to participate actively in the observance of that week in their schools and communities.

Let us reaffirm our deep interest in the training ground of democracy. Let us study the programs of our schools and demonstrate our support for the work of our dedicated teachers. Let us take every opportunity to strengthen our educational system so that our young people can be prepared to meet the challenge imposed on our Nation by this competitive century.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Seal of the United States of America to be affixed.

DONE at the City of Washington this first day of August in the year of our Lord nineteen hundred and sixty, and of the Independence of the United States of America the one hundred and eighty-fifth.

(SEAL)

DWIGHT D. EISENHOWER

By the President:

CHRISTIAN A. HERTER

Secretary of State

Eight Critical Questions about the Use of Tests

ROBERT L. EBEL
Vice President, Educational Testing Service
Princeton, New Jersey

SEVERAL months ago the editor of *Education* suggested an issue largely devoted to articles on testing. He emphasized that these should be written so as to be interesting and useful to classroom teachers. It occurred to us that we might focus attention on some of the critical questions which many teachers and parents are currently asking about the role of tests in modern education. The questions are as follows:

1. Is the current trend toward increased testing in education desirable?
2. Is the widespread use of objective tests educationally constructive?
3. What is the proper role of intelligence tests in education?
4. Should a local school system organize its own local testing program and restrict its participation in wide-scale testing programs?
5. Under what conditions should test scores be reported to students and parents?
6. Should the scores on standardized tests be used to judge the effectiveness of a teacher or an educational program?
7. Do standardized testing programs tend to restrict curriculum development and to limit creative teaching?
8. How broad is the scope of written tests? Can they provide valid measurements of important noncognitive outcomes of education?

These questions are to some degree controversial. We thought it would be desirable to get several responses to each question from experts who not only have specialized in the theory and techniques of testing, but also are men whose attentions have been directed specifically to the applications of tests. We were fortunate to secure the co-operation of these test specialists: Dr. Warren G. Findley, Assistant Superintendent for Pupil Personnel Services, Board of Education, Atlanta, Georgia; Dr. J. Raymond Gerberich, Director, Bureau of Educational Research and Service, University of Connecticut, Storrs, Connecticut; Dr. J. Thomas Hastings, Director, Unit on Evaluation, College of Education, University of Illinois, Urbana, Illinois; Dr. Robert D. North, Educational Records Bureau, New York, New York; Dr. J. Francis Rummel, Director, Oregon Cooperative Testing Services, University of Oregon, Eugene, Oregon; Dr. J. Wayne Wrightstone, Director, Bureau of Educational Research, New York City Board of Education, Brooklyn, New York. All of these men are directly involved in the operation of testing programs, and in the use and interpretation of tests in the classroom.

As one reads their answers to the questions, he will note a surprising unanimity of opinion. Where differences appear, they usually may be at-

tributed to a somewhat different approach that the writer has taken to the question, highlighting a different aspect or implication of it. On the other hand, the reader will find little duplication among the comments made.

Each of the respondents wrote his answer to the question independently of the others. There was no exchange or review of responses among them. In some cases it was necessary to shorten the comments somewhat to keep within our space limitations. I must assume full responsibility for any distortion of any writer's point of view which may have been the result of this cutting.

One fact emerges quite clearly. These seemingly simple questions about the uses of tests in modern education are in reality quite complex. To give an easy, dogmatic answer to any of them is to reveal a lack of appreciation of what is involved in testing and in education.

I hope the reader will enjoy discovering what the six experts have to say on these eight critical questions. Although they wrote to communicate to teachers, at least one specialist in testing read their comments with considerable profit.

References cited by the experts are listed below:

REFERENCES

1. Gerberich, J. Raymond. *Specimen Objective Test Items: A Guide to Achievement Test Construction* (New York: Longmans, Green & Co., 1956).
2. "Policies and Practices of ERB Member Public Schools in Releasing Test Results," *1959 Achievement Testing Program in Independent Schools and Supplementary Studies*, pp. 90-101. Educational Records Bulletin No. 74 (New York: Educational Records Bureau, July, 1959).
3. Sandin, A. A. "Factors Influencing Curriculum in Oregon Schools" (A Research Study Underway, University of Oregon, November, 1959).
4. Traxler, Arthur E. "Are the Professional Test-Makers Determining What We Teach?" *The School Review* (Summer, 1958), pp. 141-151.
5. Tyler, John M. (Chairman), *A Study of Factors Related to Academic Achievement in the Public Schools* (Hartford, Conn.: Connecticut Citizens for the Public Schools, June 1957).

Bitter are the tears of a child:
Sweeten them.
Deep are the thoughts of a child:
Quiet them.
Sharp is the grief of a child:
Take it from him.
Soft is the heart of a child:
Do not harden it.

—Lady Pamela Wyndham Glenconner, *A Child*

The Trend toward Increased Testing

Question: Is the current trend toward increased testing in education desirable?

Dr. Warren G. Findley

The current trend toward increased testing in education is more helpful than it is harmful. In schools which are unaccustomed to standarized testing or which are without specialists to help interpret test results, there probably will be more lost motion and waste than there will be damage. Tests have been available for some time. Moreover, most school people will use the test results to supplement, rather than to supplant, teacher judgment about the learning process.

Criticism of the abuses and false hopes of the period from 1920 to 1935 has been circulated widely. Few educators will use scores from group tests of personality, except as leads pointing to a need for further intensive study. They generally will use interest measures to supplement aptitude and achievement measures in educational and vocational counseling; they will not use these test results alone. They also will need to repeat interest inventories at intervals of two or three years in order to detect the changes that frequently occur during the school years.

In our Atlanta system, one can find an example of a good use of test scores for purposes which are understood by parents, students, teachers, counselors, and principals. Arithmetic scores attained by eighth-grade students on standardized tests are used to guide these students toward choosing to start the study of algebra in the ninth grade or toward continuing to study "basic mathematics" for another year.

Test scores taken in conjunction with teacher recommendations are used not only to guide this choice, but also to serve other purposes. Papers with low scores can be analyzed for the specific weaknesses that need to be remedied. Papers with successively higher scores can be used for sectioning by ability in algebra, including the setting up of special sections for acceleration of the most competent students.

Promise for success in the college study of engineering and physical science is indicated by high arithmetic scores. Those pupils who score high but do not plan to attend college may be encouraged to review their decisions.

Dr. J. Raymond Gerberich

It is certainly true that tests are sometimes used for purposes they do not appropriately serve. It is also true that test results—scores, percentile ranks, mental ages, intelligence quotients, grade and age equivalents—are sometimes misinterpreted and misused. The

ultimate result, whether from using an unsuitable test, from using a test result incorrectly, or even from compounding these two frequent errors, is nearly always inappropriate, and it may even be harmful.

Many tools far more commonly accepted and widely employed than educational and psychological tests are widely misused. Every week, thousands of licensed automobile drivers strike down pedestrians through misuse of the automobiles they supposedly are qualified to drive safely.

Doctors on occasion prescribe the wrong treatment for patients, because the tools they are licensed to employ are not so used as to enable them to make correct diagnoses of ailments.

Most teachers receive the stamp of society's approval in the form of a license before they are allowed to teach in the public schools. Special certification is often required before a trained technician is authorized to administer individual intelligence tests, such as the Stanford Revision of the Binet-Simon and the Wechsler scales, and projective techniques, such as the Rorschach and the Thematic Apperception Test.

These safeguards seem to provide for reasonably effective use of tests by teachers. Furthermore, they seem to make possible the further refinements of the tests themselves and of their uses, which will bring greater effectiveness to the work of our schools.

Dr. Robert D. North

Increased use of standarized tests in education is *potentially* dangerous—just as is the trend toward increased use of antibiotics, airplanes, and atomic energy. Almost all the products of modern man's inventiveness that have widespread applications are capable of producing disastrous consequences if they are misused or improperly controlled.

Among the dangers inherent in the indiscreet use of standardized tests are the following: squandering of classroom time (One student, when asked what he learned at school, is reported to have replied: "They didn't teach me anything; they just tested me."); detracting emphasis from broad educational goals; goading student anxiety; and misjudging students or schools through misinterpretation of the test results.

When tests are wisely used, however, dangers such as these, as well as numerous others that could easily be added to the list, are avoidable. A well-constructed, standardized test is an efficient device, yielding more information about the student per unit of time than do most teacher-made tests or observational methods. Standardized tests, including those in the achievement area, should be an integral part of the school's educational and guidance program, rather than hurdles placed in the student's path.

Tests, which are carefully selected to fit the school's curricular and guidance goals, judiciously spaced to yield a pattern of information about the developing student, and skillfully interpreted with due regard for measurement limitations, can be as valuable to educators as medical instruments are to physicians. Misused, both standardized tests and medical instruments are potentially dangerous.

Dr. J. Francis Rummel

Briefly, YES! During the past few years many new tests have been de-

veloped for guidance, placement, and identification of talent. Considerable publicity has been given to the increased use of these tests. However, the vast majority of our better public schools and colleges have been making educational decisions on the basis of well-developed testing programs that have been in operation for many, many years. Aside from the addition of a few specific tests required by agencies providing college scholarships, there has been but little, if any, increase in testing among these better schools.

On the other hand, there have been a great number of schools that have not had even an adequate testing program nor an adequate program of educational and vocational guidance and counseling. Under the National Defense Education Act of 1958 (NDEA), federal funds have been made available for the improvement of programs in testing and guidance, in an attempt to meet many of the concerns mentioned previously.

As more and more teachers have been trained in the uses and interpretations of tests for various purposes, there has been a corresponding increase in testing among these schools. Thus the current trend in increased testing has not been dangerous by any means, but rather has increased the effectiveness of education and guidance work.

Dr. J. Wayne Wrightstone

The current trend toward increased testing is not dangerous when desirable educational purposes are served. Most of the increased testing occurs at the secondary-school level and involves differential aptitude tests or tests of general educational development. These types of tests provide information that aids the guidance counselor and the teacher faced by the problem of advising students about future educational and vocational goals. They reveal patterns of strengths and weaknesses among students.

When used with other relevant data, these types of tests are valuable in delineating those aspects of the student's abilities that may be cultivated to maximum growth and development and used for the welfare of the individual and of society. Tests of general educational development stress objectives of using information in interpretation of data and in problem-solving. Their effect upon curriculum and learning is constructive.

Increased testing, undertaken to provide repetition of measures of academic aptitude and achievement at short periods of time, and testing motivated by external goals, such as competition for scholarships and awards, is not necessarily dangerous. However, it is often uneconomical — it may constitute a waste of both the student's and the school's time and effort to achieve desirable educational goals. Where such a situation exists, a concerted study by all of the agencies involved in both interschool and competitive testing programs is indicated.

Let this suffice, by this conceive the rest,
He should, he could, he would, he did the best.

—Robert Southwell, *Look Home*

The Effects of Widespread Objective Testing

Question: Is the widespread use of objective tests educationally constructive?

Dr. J. Wayne Wrightstone

The widespread use of objective tests is educationally constructive when these tests provide measures of major objectives of the curriculum.

Most educators will admit that widespread use of objective tests, which are valid for objectives of the educational program, provides for a good sampling of pupil behavior or understandings, are reliable measures, and contribute to the assessment of pupil strengths and weaknesses. They provide a good means of comparing the achievement or ability of groups and individuals with national and regional norms. Objective tests, used in combination with other evaluative methods, have many educationally constructive uses in administration, supervision, instruction, guidance, and research.

Objective tests, however, should not be used as the sole method of evaluating pupil progress. They should be supplemented by essay examinations, anecdotal techniques, interviews, questionnaires, inventories, checklists, rating scales, personal reports, and sociometric methods. All these methods have appropriate roles in a comprehensive program of evaluation.

Dr. J. Francis Rummel

Much of the current criticism of objective tests and much of the controversy over the relative merits of the written "essay" vs. "objective" tests has arisen because of (1) lack of understanding of the role of each in the over-all educational program; (2) lack of familiarity with well-developed objective tests; and (3) failure to recognize the practical efficiency of objective-type measurement of the vast number of skills, attitudes, interests, and items of information, necessary in evaluating the outcomes of our educational programs.

One common criticism of objective tests is that they deprive students of needed practice in written expression. No one would dispute the desirability of developing the skills of written expression. Nor would anyone dispute the fact that writing an essay test does afford practice in such skills. However, the ability to write coherent and cogent composition is too important an educational outcome to be left to such incidental learning as the writing of an examination. It should be carefully provided for in every instructional program and should be evaluated separately from the evaluation of the many other educational outcomes.

There has been considerable research to indicate that readers of essay answers evaluate them quite differently, depend-

ing on such factors as (1) differences in the order in which papers are read; (2) differences among readers in the relative merit of the points of information presented; (3) the influence of handwriting; and (4) differences in the standards required for different marks.

Nevertheless, if the broad question is subdivided into a number of specific aspects, separate test items can be developed to measure a student's knowledge on each. The student's answers to these items can be scored easily and accurately by anyone using an answer key.

An objective-type test allows for a much wider sampling of knowledge, skills, attitudes, and interests within the same period of time used for writing essay answers to only a few items. It is scored much more easily than an essay test, and it is economical of time for both teacher and student. Furthermore, it forces a student to answer a question directly instead of allowing him to "write around it."

On the other hand, objective-type items usually do not provide certain opportunities for the student as well as essay-type questions. For example, the student, in an objective test, lacks the opportunity to organize or reorganize material in some logical order; to synthesize materials from several sources; to demonstrate creative ability; or to write effectively.

Hence, it may be seen that both types of tests are necessary for different purposes and that both have advantages and limitations.

Dr. Robert D. North

Objective tests, as contrasted with essay or free-response tests, are frequently criticized because they require the students only to make "black marks on paper," rather than to express themselves effectively. They are criticized, also, because they call for only "recognition of correct answers," rather than for thought.

It is true that some students may be able to earn high scores on objective tests (other than those specifically designed to measure language skills) without revealing their serious weaknesses in spelling, grammar, or effectiveness of expression. Furthermore, the exclusive or excessive use of objective tests may tend to discourage students from developing their communication skills. For these reasons, objective tests should be supplemented with the traditional essay or free-response types of tests.

Objective achievement tests are educationally constructive in that they require the student to give specific answers to specific questions; they permit subject-area achievement to be measured independently of writing skills; and they reduce, if not eliminate, subjectivity in evaluating the student's responses.

Open-ended questions or essay topics, on the other hand, often allow the student to give evasive answers that are difficult to evaluate, that generally afford only limited coverage of the subject-area span being tested, and that are time-consuming for the student to answer and for the teacher to grade.

If an objective-test item can be answered by a student through a simple recognition process, the fault lies in the item-writer rather than in the type of item per se. A skillful item-writer can use objective-test items effectively to tap reasoning, understanding interpretation, and many other complex skills. Ample evidence of this has been assembled by Gerberich (1).

For example, in an earth-science test, the student may be given a description of a type of rock formation and be required to select the answer choice that offers the best explanation of the causes of this formation. In a social-studies test, the student may be asked to judge which of five possible consequences would most likely ensue if the United Nations were to take a certain type of action. The depth and scope of mental functions that can be tapped by objective tests are limited only by the item-writer's ingenuity.

Dr. J. Thomas Hastings

Collection of evidence concerning behavior is fundamental to the improvement of education, industry, commerce, farming, engineering, or any other human activity. It is seldom that we collect too much evidence, except in the sense that people sometimes are not prepared to interpret it.

The phrase "objective tests" means various things to various people. Ordinarily, it calls to mind the type of examination in which questions may be answered by checking one of two or more responses which are supplied to the examinee. Actually these tests are "objective" only in the sense that, if the response to be accepted is agreed upon prior to scoring, the scoring can be done by several different people with the same end result.

Perhaps the name "supply-type examination," which is sometimes used instead of "essay," will differentiate more clearly the two notions of having the examinee supply his answer and of having the examinee choose between answers supplied. Now the choice-type item is as subjective as is the supply-type item if one is talking about the original development of the questions. Someone (or frequently a committee) must decide which item in a given topic or behavior among the many items possible should be asked.

The supply-type examination, however, has an additional subjective element: When scored by a number of different specialists who are equally competent, it may be given significantly different scores. On the supply-type item, both the selection of the items and the judgment concerning responses are controlled mainly by subjective values and understandings.

Tests made up of choice-type items may call for a range of behaviors beyond that of trivial factual knowledge. It is true that once upon a time virtually all of the so-called objective tests (choice-type) had to do only with recognition of unrelated and sometimes rather trivial facts. Today this description applies only to a small proportion of published tests and to those teacher-made tests constructed by individuals who are unaware of the range of behaviors which can be tested by the choice-type question.

For tests in either format, the key to the question about educational constructiveness lies in the answers to two other questions: Have the tests been built to sample appropriate behavior, and have they been constructed by individuals who are capable of using the latest techniques in test development? Well-made and relevant tests of any format are educationally constructive.

Dr. J. Raymond Gerberich

Any field of knowledge seems certain to benefit from the use of tools and tech-

niques that contribute to broader and deeper understandings of its appropriate purposes and functions. Objective tests are among the most effective devices in the tool kit of the educational practitioner for serving this purpose.

Objective tests are not the most reliable tools of measurement man has evolved, but they are the most reliable instruments now existent for measuring those complex aspects of pupil behavior in which educators are primarily interested. Moreover, new tests that improve upon previously existing tests or that probe into previously unmeasured or poorly measured areas of pupil behavior appear rather frequently.

Each new advance in a major educational tool must inevitably make its contribution to the educational welfare of present and future pupils, even though most, if not all, of these advances will be reduced to stepping stones for still further refinements in the future.

Dr. Warren G. Findley

Increased use of objective tests is educationally constructive. The typical essay tests serves a purpose, but it is recommended chiefly by its ease of construction.

Objective questions, properly constructed, are useful in many ways:

1. They provide more efficient appraisal of current learnings than do essay questions, because a student can be tested on more points or ideas in a given amount of time.

2. The teacher can grade the class's papers more rapidly and dependably when he does not have to evaluate partial misinterpretation of questions, extended processes on which the student gets off the track at early stages, and downright efforts to bluff or to get credit for knowledge that is beside the point.

3. The teacher can tabulate and analyze errors more readily than he can with essay materials.

4. The teacher may repeat questions from class to class and from year to year to note differences in effectiveness of different methods of teaching particular topics.

5. The teacher can improve questions from year to year by analyzing sources of ambiguity revealed by the responses of the better students.

6. Special advantage is not given to the good writer, over those who comprehend but are less skilled in quick expression.

Where will the student get the practice he used to get in organizing thought and in writing? I submit that this practice can be obtained directly by requiring more written work in courses and evaluating it. In this way the student can be given practice in the real skill of communicating ideas to others in writing.

Just ponder this: The essay test, in a subject such as history or science, for example, constitutes the only situation in life where one writes to prove to someone who already knows the answer that he knows it, too. Normal writing involves communicating ideas to others who can understand, but do not yet know what one has to say. The writing of essays or compositions is learned and evaluated best by considerable writing on varied topics over a period of a semester, rather than by brief unreliable evaluations based on short and unrepresentative writing samples obtained from relatively few tests.

The Role of Intelligence Testing

Question: What is the proper role of intelligence tests in education?

Dr. J. Thomas Hastings

To understand the role of intelligence tests in education, one first must understand that there is no direct way of measuring native or God-given intelligence. Intelligence is implied from the way in which the individual apparently has used his ability to learn within the cultural milieu in which he has developed.

The common intelligence test—or, as we call the type used in schools, the academic-aptitude test—is designed to answer the question, "How do these individuals differ from one another in the way they apparently have learned certain common things in the total cultural situation, including the school?"

The achievement test differs from the intelligence test in that it is focused more precisely on the learnings that have taken place in the classroom. Naturally, there is a rather high positive relationship between intelligence tests and achievement tests, since we really are saying that, in general, learning in the classroom situation parallels learning in the total social situation, which includes the classroom.

The motivational factors which affect the extent of learning in the classroom may be different from the factors which affect the extent of learning in the general social situation. In addition, what is taught from classroom to classroom may differ widely from what is "taught" in the general situation, which includes the classroom.

If we can get teachers, pupils, and parents to see this relationship between intelligence and achievement tests, then we shall make the roles of intelligence tests clearer. Actually, we could use achievement tests to sample "intelligence" if we described the intelligence as the amount the student had learned in certain courses. Then we could use the results to predict the chances of future learning on the basis of past behavior. The so-called intelligence or academic-aptitude tests have been designed to take care of, at least somewhat, the differences in classroom teaching from situation to situation and differences in motivation for specific classroom content.

Dr. Robert D. North

Ideally, measures of intelligence or academic aptitude should provide information about a student's learning potential—i.e., his educational "input" capacity. His output, in terms of academic achievement, could then be appraised in relation to this capacity.

If a measure of intelligence could be obtained that would be completely independent of the effects of the individual's past achievement, such a measure would be extremely useful. Unfortunately, no one yet has succeeded in developing a method for evaluating learning ability entirely apart from acquired knowledge or skills. Moreover, the intelligence tests now in use differ

considerably in the extent to which they draw upon the effects of formal school training. Recognition of these differences is important in interpreting the test results.

Tests that are heavily saturated with formally acquired knowledge or skills are useful in appraising the student's readiness for the next stage of academic learning, but they tend to conceal latent capacities. If an intelligence test is to be used to estimate what a student might achieve if he were given suitable opportunities and if he were adequately motivated, the test should be as free as possible of material directly dependent upon formal instruction. The fact that a perfect test of this type, affording a "pure" measure of academic-learning aptitude, does not exist, should not deter schools from using the available ones that most nearly approach the desired specifications.

At best, the results of an intelligence test yield an indication of the caliber of a pupil's mental functioning, under standardized conditions, at a specific point in his life. The amount of significance that should be attached to these test scores or IQ's depends upon considerations, such as the testing conditions, the reliability and construct validity of the test, and various types of supporting information about the student that have been accumulated.

If intelligence tests are administered at regular and frequent intervals, preferably annually, the scores can contribute substantially to a reasonable estimation of the level of a pupil's academic learning ability. With knowledge of the typical relation between the intelligence test scores and academic achievement, college admission requirements, and vocational objectives, the trained counselor can use these scores as part of his pool of information in helping students to select appropriate goals and to evaluate their rate of progress toward those goals.

Dr. Warren G. Findley

Unfortunately, psychologists and schoolmen sold themselves and the parents of school children an oversimplified concept of intelligence and the IQ that is difficult to replace with more refined concepts, in keeping with present knowledge in this area.

Today, most psychologists and educators realize the greater complexity of intellectual competence; understand the great importance of such competence as well as the great importance of intellectual drive, stemming chiefly from motivation in the home; and recognize the significance of acquiring habits and attitudes regarding the world of work, as determiners of intellectual, social, and vocational effectiveness. They also know that measurement of intelligence inevitably involves cultural influences.

Intelligence tests take their rightful place among indicators of capacity to learn at various stages of educational development. The listening-comprehension test; visual- and auditory-discrimination tests; oral-vocabulary tests; number readiness tests; group intelligence tests that yield a single score; multiple-aptitude batteries; invidual intelligence tests that yield single or dual values—all are helpful to the teacher and the counselor in setting goals for students and in evaluating the causes of success or failure in learning.

One fruitful view holds that group intelligence tests appraise the competence effectively available to individuals in

group learning situations, such as the typical classroom, while individual intelligence tests come nearer to appraising the full talent available to individuals under ideal working conditions.

Early determination and emphasis upon group IQ is dangerously undependable. In Atlanta, we prefer to wait until the fourth grade for such testing. We also favor Cleveland's term PLR (for Probable Learning Rate) as more helpful in describing group-test IQ's and distinguishing them from individual-test IQ's.

Dr. J. Wayne Wrightstone

Most of the so-called intelligence tests in education are generalized measures of academic aptitude, or the ability of the individual to achieve academic tasks. Some intelligence tests provide a single index; others provide verbal and nonverbal indexes; still others provide multiple indexes for multiple mental factors.

Studies have revealed that all intelligence-test indexes are influenced by many personal, cultural, economic, social, and environmental factors. These fluctuate in their impact upon the individual at various stages of his growth and development, and, consequently, the intelligence index or indexes fluctuate for the individual. Sometimes these fluctuations are within relatively narrow limits; at other times, within relatively broad limits.

An intelligence test should be regarded as only one of the many measures that the schools use to assess the aptitudes and achievements of the individual. Proper use of tests involves continuous reassessment of the individual's abilities by means of a comprehensive review of all current data about the individual as he grows and develops. Intelligence and achievement measures should be regarded as dynamic, rather than static or fixed, indexes of the potential of an individual.

Dr. J. Raymond Gerberich

Intelligence tests at present seem to be most appropriate for supplementing, or perhaps complementing, two other major types of tests and also various other tools and techniques of pupil appraisal in affording a sound basis for pupil guidance. The former consist primarily of achievement tests and personality inventories. Included among the latter are cumulative records, teachers' reports to the home, rating scales, questionnaires, sociograms, observations, interviews, and case studies.

Appraisal of pupil aptitudes, abilities, interests, competencies, and needs by means of a variety of such procedures should produce sounder evidence for attempting to meet pupil needs than could intelligence tests or, for that matter, any other single procedure or combination of only two or three procedures.

Results obtained from the use of intelligence tests, here interpreted to include instruments for measuring specific aptitudes and somewhat more broadly conceived "differential" aptitudes as well as general intelligence, differ in significant degree, if not absolutely in kind, from results produced by other tests and techniques. Therefore, even though intelligence or mental-ability tests of these three types appear not to make a unique contribution to the understanding of pupils, they presently serve a purpose that would largely remain unfulfilled if they were not em-

ployed. Under special and, at the same time, optimum conditions, they afford better indexes of future pupil performance than do any other tests.

Dr. J. Francis Rummel

Inasmuch as intelligence tests inevitably include material that is obviously influenced to a large extent by learning opportunities and by the types of activities and individual experiences in the culture in which he lives, it is impossible to determine how much of his performance on the test is attributable to "innate ability" and how much is attributable to "experience" or "learning."

It may also be seen, from inspection of various achievement tests in academic areas, that there is a very high relationship between them in the types of items used and the types of information yielded. This relationship is so high as to result in a point of view that the difference between achievement and intelligence tests is largely spurious; that the same things are being measured and given different names; and that the major difference between them is primarily whether the scores are given in psychological terms or in educational terms.

In other words, from the same universe of items, subtests could be compiled with items dealing with memory, number concepts, reasoning, spatial relationships, etc., or they could be compiled with items dealing with vocabulary, reading comprehension, language, number computation, problem solving, etc. Thus, from the same universe of items we could have an "intelligence" test or an "achievement" test. Both yield information about essentially the same thing, but the information is viewed in different ways.

The typical achievement test usually deals with a narrower range of academic knowledge than the typical intelligence test and includes more items for a comprehensive measurement of that range. On the other hand, many parts of the typical intelligence test involve novel situations not usually found in the typical achievement test. Thus the intelligence test's novelty and apparent unrelatedness to ordinary school subjects may create greater interest and better testing morale on the part of students who have antipathies toward one or more school subjects than will the achievement test. Moreover, they may reveal abilities that have escaped the influence of such factors. They also may be useful for making comparisons among pupils whose school attendance has been irregular or among those who have attended different schools.

Intelligence is quickness to apprehend as distinct from ability, which is capacity to act wisely on the thing apprehended.

—Alfred North Whitehead

Local vs. Wide-Scale Testing Programs

Question: Should a local school system organize its own local testing program and restrict its participation in wide-scale testing programs?

Dr. J. Francis Rummel

Each school—through co-operative study and consideration by administrators, teachers, pupils, and parents—should determine the specific objectives of education for its pupils and should determine the kinds of information needed about those pupils to enable it to carry out its objectives. On the basis of this study, the school should develop its own testing program to obtain the necessary and desirable information.

Wide-scale testing programs, to be appropriate for use in a particular school, should include tests which are in agreement with the purposes of that school. Furthermore, the norms for the tests should be based on populations similar to the local population. Insofar as appropriate wide-scale testing programs are available, the school will be able to make more meaningful interpretations of test results if it participates in such programs than if it develops its own local tests.

On the other hand, there may be many specific areas for which desirable information is not available from wide-scale testing programs. For these areas, locally developed tests must suffice.

Dr. J. Raymond Gerberich

A local school should develop and expand its own local testing program, either through the use of locally constructed tests (if the school personnel includes qualified technicians) or through the selection and use of standardized tests that best meet its needs. A local school system need not limit its participation in wide-scale testing programs by virtue of developing its own programs. The purposes and the local uses of the two types of programs are not at all in disharmony nor is there necessarily any overlap or duplication.

There are many curricular constants or near-constants in education, whether in Caribou, Maine, or in San Diego, California; whether in Albion or in Ypsilanti, Michigan. Both testing and teaching needs in these areas of constancy—primarily the basic skills and basic content areas—differ much more in accordance with individual differences among pupils in a particular community than in accordance with differences among communities in a given state or in different sections of the country. Wide-scale testing programs, whether city-wide in a large metropolis, state-wide, or even nation-wide, often can serve local needs in these areas of constancy more economically, in terms of financial outlay and staff time, and more effectively.

With appropriate controls, of a type regularly provided in many wide-scale testing programs, local test results are treated confidentially in the centralized agency. The local community can exercise two basically important types of local option—concerning which of the tests available through the centralized service it chooses to give and concerning how it will use and disclose results for its own pupils.

There are also areas in which the differences in curricula may well be greater than the similarities. Educational needs of children and, hence, school curricula in the Pennsylvania coal fields differ in significant ways from child needs and school offerings in Wyoming ranch country. In like manner, the industrial East differs from the agricultural Midwest, and the Panhandle differs from the distant Gulf Coast section in Texas.

It is in recognition of the impact of these differences on the interests and needs of pupils (and, hence, on the school program) that a school should probably construct its own tests or at least select appropriate tests for fulfilling its specialized and sometimes even unique needs.

Dr. J. Wayne Wrightstone

Basically, a local school system should develop its own local testing program, but it should maintain enough flexibility to permit participation in wide-scale testing programs. In actual practice, most local school systems do maintain a balance between local testing programs and state or national standardized programs.

Many of the basic educational objectives are common to local school systems. These objectives may be tested validly and economically by standardized tests. Practically every local school system will have some objectives that are unique and will require tests that are specially constructed to measure the achievement of these objectives. New York City, for example, constructed local tests for its program in elementary-school mathematics and science, because wide-scale testing programs did not adequately measure some of the content and objectives.

Dr. Warren G. Findley

A local school system generally is not in a favorable position to develop and emphasize its own local testing program without regard to wide-scale testing programs. Few local systems are sufficiently equipped to build their own tests. The construction of effective test questions requires technical skill of a high order.

School systems are well advised to organize a system-wide program of testing, based on tests that have been studied by local committees of teachers to insure that they possess the greatest possible relevance to the local program of study.

Annual fall testing of achievement by successive levels of the same battery makes for continuity of appraisal in the learning areas of central concern. Such testing allows each teacher not only to appraise the current status of each of his students with respect to these learning areas, but also to relate this status to past achievement, to measures of learning capacity, and to other factors found in well-maintained cumulative record folders for the individual students. The same test data may be summarized later by classroom, by grade, by

school, and system-wide for general "quality control" purposes.

There will be instances where nationally standardized tests have been unable to keep up with rapidly changing curriculum content and emphases. The whole area of teaching science in the schools is an example today. Reading, arithmetic, language usuage, spelling, and social studies have a widely accepted content; moreover, the grade placement of topics in these areas is similar from one school to another, and from one geographical region of the country to another. In science, however, there is neither a widely accepted content nor a consistency of grade placement of topics. New discoveries abound; and the times demand an earlier and heavier emphasis in instruction. In this area, then, we may wish to develop supplementary tests locally until the instructional pattern is stabilized nationally and can be captured for standardization and nation-wide testing.

Dr. Robert D. North

In a sense, this question is similar to one that might be asked about textbooks: Should a school system adopt a co-ordinated series of texts prepared by one publisher, or should it choose freely among the tests of a number of publishers?

The answer, of course, is that each text and each test should be considered on its own merits. Only those that are consonant with the school system's educational objectives should be used—insofar as the school system has freedom of choice.

School systems in some areas are not entirely free to remain aloof from cooperation in certain wide-scale testing programs because of community pressures for giving the pupils every possible chance in the competition for college admissions and scholarships. Aloofness from these programs would not be desirable in any event, since they serve a useful purpose in enabling the student to fulfill the testing requirements of a number of colleges or scholarship donors in a single testing session.

The school officials can help to keep such program testing in proper perspective, however. If attention is focused on the school system's own co-ordinated testing program and the cumulative records of the results, the tests administered under outside sponsorship can be relegated to the role of supplying supplementary information.

If a school system finds that the tests that are best suited to its needs are offered in a state-wide, regional, or national program, participation in that program is likely to offer the following advantages: up-to-date large-scale norms for evaluating the results; efficient and economical scoring and reporting services; and research services.

When large-scale programs are controlled co-operatively by the participating schools through their designated representatives, as in the case of many statewide programs and the national program of the Educational Records Bureau, the large-scale testing enterprise can be tailored to meet the measurement needs that the participating schools have in common.

Regardless of whether the testing program is organized on a local or central basis, primary emphasis should be placed on regular, systematic measurement of the developing aptitudes and achievement of each child. This objective cannot be obtained through spas-

modic local testing nor through participation in a fortuitous assortment of unrelated wide-scale programs.

Dr. J. Thomas Hastings

This query is somewhat like asking whether a glass-jar manufacturer should emphasize his own production outfit's special problems of space and design or use standard conveyers and standard tempering, cooling, or gathering equipment. The answer to the question would seem fairly obvious to the glass manufacturer. He certainly would use only those pieces of standard equipment which fit his production and plant-facility needs. He must start on the process of acquiring equipment by making very sure that he knows what special items he is trying to produce and what his equipment needs are.

The local community, in all cases, must go as far as it possibly can in defining its educational objectives, both within individual classes and throughout the school as a whole. If this has been done, then the decision on testing concerns the extent to which available wide-scale testing programs give it the necessary information about the behaviors of its students. Every school must supplement the results of any wide-scale testing program with locally developed and locally selected instruments if it expects to gather relevant behavioral evidence on all of the important aspects of the school objectives.

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Reporting Test Scores

Question: Under what conditions should test scores be reported to students and parents?

Dr. J. Raymond Gerberich

It would be gratifying, at least on the surface, if the answer "Under all conditions," could be given to this question. However, school patrons and even teachers are faced with so many new concepts and such complex materials when they attempt to interpret modern test results that an unqualified affirmative answer seems to be inappropriate.

Results from all of the various types of achievement tests are commonly made available to pupils and their parents in modern schools. Increasingly of late, reports of results on test batteries are implemented by profiles and leaflets outlining as simply as possible what the scores mean and how they should be interpreted. Inasmuch as the disclosure of such results usually leads to constructive action, channels and techniques for even more effective reporting of achievement test results in the future should be sought.

Personality-test results are seldom passed on to parents and pupils in the relatively small proportion of schools that use such instruments. Some results of personality assessment, particularly results from adjustment inventories or highly technical projective techniques, may even be restricted to technically-trained personnel for use in counseling.

An illustration seems appropriate in pointing up reactions to, and dangers involved in, blanket disclosure of intelligence test results to parents of pupils. The board of education in one Connecticut community recently demanded that guidance officers regularly report group test IQ's to the parents of all pupils in the school system. The school personnel mustered evidence and points of view from outside agencies to support their opposition to this mandate, with the result that the action was subsequently rescinded.

Widespread disclosure of IQ's either to pupils or their parents seems to be unwise, largely because the nature of the IQ is widely misunderstood and because parents often interpret low IQ's in their children as reflections on their own mental levels. Consequently, intelligence-test results probably should not be disclosed as freely as achievement-test scores nor be as rigidly restricted as personality ratings.

Dr. Warren G. Findley

Reporting of achievement-test scores to parents and students can be a very effective means of communicating helpful information and establishing constructive working relationships within parent-teacher-student teams. Reporting of scores on tests of scholastic aptitude presents more of a problem, but this also can be done effectively. However, it should be done in general terms only. The teacher or counselor should refrain from mentioning a specific IQ value because of the dubious connotations of the IQ concept in many minds.

It is only reasonable for parents and students to be interested in student achievement. The test scores, in the form of grade scores or percentiles for pupils of a certain grade nationally, present an objective way for the teacher to convey how Johnny is doing—a way that is not subject to the charge, "That is just your opinion!"

Actually, students in elementary and secondary schools may be enlisted in charting their own progress on "profile" charts, which show their relative strengths and weaknesses in different subjects or even in different skills or areas within broad subjects. An indication of achievement potential can well be included in the graphic presentation if it is expressed in units of the grade equivalent or percentile equivalent of the mental age that generally sums up the determination of potential.

All this can be done best by invitation to parents, at times apart from the marking period. Then all parents can be invited for individual conferences about their children without regard to whether a particular child is doing superior, satisfactory, or unsatisfactory work. Much time can be gained in individual conferences if the significance of achievement-test scores is explained to large groups of parents at P.T.A. meetings or in class groups. Anonymous sample cases may be used to illustrate the interpretations. A simulated conference may be put on to provide an even clearer understanding of what may be expected in the way of interpretation and discussion at the individual conferences.

Dr. J. Francis Rummel

Whenever tests have been given, pupils invariably raise the question, "How did I do?" The basic purpose of testing is to obtain information for the improvement of education. This can be done efficiently only if both teacher and pupil are interested in finding out "how they are doing." Therefore, some kind of interpretation of a pupil's performance on a test is necessary, and the pupil is entitled to learn of his performance as much as the teacher is. The issue isn't, "Under what conditions should test scores be reported to students and parents?"; rather, it is, "What kinds of reports should be made?"

Raw scores on a test are nearly always meaningless in themselves. Reports to pupils and parents should be made in the form of some relative score, such as percentile rank or grade-placement score. Thus, one can interpret them with respect to some reference group of students—a student's own class, his school, the students in his state, or on a national basis.

There has been little controversy over the reporting of performance on achievement test or interest inventories when the performance is expressed as percentile ranks or grade-placement scores. The major controversy has been on the reporting of score results on intelligence tests. The IQ has taken on meanings never intended by the constructers of intelligence tests, and many of these meanings have resulted in considerable distress to both students and their parents. A student who finds out that his IQ is 72 is very likely to hear that he is a "dull" child, that he has "borderline" mentality, or that he is "uneducable." His parents are likely to feel that such a low IQ is an attack on their personal worth or on their heredity. There is no reason for continuing the use of score reports that are subject to erroneous in-

terpretations which may have adverse effects on individuals.

Dr. J. Wayne Wrightstone

Test scores should be reported to students and parents under carefully controlled professional conditions, so that correct interpretation rather than misinterpretation and misuse of scores, may be assured. City-wide scores and their interpretation should be communicated in carefully prepared public-relations releases by the superintendent of schools and his staff. Odious comparisons among schools should be avoided. On single school reports of test results to parents, comparisons with neighboring schools should be avoided; rather, the constructive educational goals of the school should be emphasized.

Test scores should be discussed with individual students and parents in a confidential conference or interview. The confidential nature of test scores should be stressed. In view of the fact that there are errors of measurement inherent in any test score, it is wise not to release the obtained specific score. It is better to indicate that the student has aptitude or achievement that places him, for example, among the upper-fourth or upper-half of the students of his same age and grade; or to indicate that he is reading at fourth-grade, fifth-grade, or sixth-grade level.

In summary, test scores reported to students and parents (1) should be in approximate terms or rank or status to allow for errors of measurement; (2) should be confidential in nature; and (3) should be not only professionally honest, but also tactful, so the individuality and integrity of the student, parent, or counselor may not be injured.

Dr. J. Thomas Hastings

Research studies show that learning takes place best in the human organism when the learner is being made aware of his progress. This experimental result is not altogether different from the ancient Greek admonition to "Know thyself." There can be little doubt that both pupils and parents need to know of the abilities proclivities, interests, and learning progress of the student if we expect the students and parents to be more than passive buckets into which we pour knowledge and understanding.

The really crucial phrase in the question is "test scores." If a physician were to report blood counts and metabolism rates to a patient in the terms that the laboratory reports them to the doctor, the result would be added confusion in the situation rather than added information to the patient. The physician can, however, let the patient know of the results.

The thing that we must learn is to report in meaningful terms our best estimates of pupil behaviors which have to do with the progress of learning. In this reporting, we must make as sure as we possibly can that the recipient of the information understands that these are the best available estimates as of a particular time and situation. Neither an intelligence quotient nor an achievement score nor an interest index should be treated as though it were a revelation of a number which was stamped on the back of the individual concerned as a true and final description.

It must be recognized by all of the test-users, including students and parents, that test results are useful for inferring certain things about the person's future progress from samples of the way

in which he responds to certain stimuli situations. I personally would plea for starting the process of reporting information—not the misinformation which may result from test scores themselves—to parents and pupils at the very beginning of the educational process. I think it is important to start early and to emphasize the aforestated notions in order that the parents and pupils themselves may learn to use such information properly.

Dr. Robert D. North

As a general principle, information about test results should be given to students and parents whenever this information will lead to better understanding of the characteristics of the pupil or the school. Adequate precautions should be taken to guard against misinterpretation of the results, however. Usually this can be accomplished best through provisions for individual conferences to discuss the test results. Group meetings and printed materials have been used effectively by some schools as supplementary methods for explaining the purposes of the tests and the meaning of the scores.

In a survey that was conducted by the Educational Records Bureau last spring (2), fifty public schools answered questions about their policies and practices in releasing test results. All of these schools reported that they gave pupils and parents some information about the results of standardized achievement tests. Almost all of them indicated that they released some indications of the results of intelligence or academic-aptitude tests to pupils and parents.

The latter type of information is usually imparted through statements of general standing (average, above-average, etc.) while other types of test results are generally given to pupils and parents in terms of percentiles, grade-equivalent scores, or general classifications, according to the survey findings.

Test scores, particularly in the intelligence and academic-aptitude area, should not be released in a manner that is likely to give rise to invidious comparisons of children in neighborhood gossip. The following policy statement, submitted by one school in the survey is pertinent here:

> "Those of us who see the variation from year to year in intelligence test scores feel that there is no reason for announcing IQ's promiscuously. However, when parents are interested enough to request it, we have felt that they have a right to know the intelligence level that tests seem to indicate. We have generally assumed that it was best to interpret ability in terms of a group classification—for example, in the upper quarter of a representative group, low, average, etc."

Pupils and parents will derive maximal benefit from the tests when a trained counselor gives them information about the results in the context of other related data and observations.

Nothing great was ever achieved without enthusiasm.
—Ralph Waldo Emerson, *Essays*

Using Tests To Judge a Teacher or a Program

Question: Should the scores on standardized tests be used to judge the effectiveness of a teacher or an educational program?

Dr. Robert D. North

The "effectiveness" of teachers or educational programs is not easy to evaluate in a nation where educational goals are broad and often only vaguely defined. Even when certain measurable components of these goals can be identified, appraisal of related instructional or curricular effectiveness should be made on a broader base than the results of standardized tests alone.

Inasmuch as standardized achievement tests are designed to fit the common curricular objectives of a large cross section of schools, they are not likely to match exactly the measurement needs of any single teacher or school system. When test results are interpreted for an individual, class group, or school system as a whole, allowance must be made for the discrepancies between the test coverage and the local objectives.

One of the major arguments that has been advanced against the use of test results for the appraisal of teacher effectiveness is that the sampling validity of a test can be vitiated if a teacher coaches his pupils specifically for the test. Since this is true, teachers should not be given incentives to waste their time and the school's funds by administering tests under circumstances that will yield spurious results.

Some of the temptations that teachers might face with respect to coaching students for tests can be reduced if tests with several alternate forms are used. More importantly, the teachers should be given reason to feel that the results will be interpreted fairly, with ample consideration being given to pupil characteristics, such as aptitude, motivation, and previous training, as well as to home and environmental factors that may influence the attainment of educational objectives.

For the most effective use of standardized tests, teachers should feel that the results will be used primarily to evaluate the development and progress of the pupils. The class or school data should be utilized mainly as background information for the analyses of the individual records.

Dr. J. Thomas Hastings

This problem is probably one of the most complicated ones raised so far. Looking at it one way, if scores on standard tests do reflect, with a fair amount of validity, the learning that has taken place in a given subject area or curriculum, then why should one not use the results as one of the bases for studying the effectiveness of teaching — and,

therefore, the effectiveness of the teacher? This epitomizes a direct and far-too-simple solution to the problems involved in the question.

It is true that, within limits, society judges an engineer in part by the bridge he builds or the tail fins he designs. Manufacturers of consumer goods, salesmen, and others are judged in terms of product or output. If one now agrees that such people are so judged, he should ask himself whether he would care to judge a physician (with the same finality) on the basis of the number of his patients who are restored to normal healthiness.

More of us reject evaluating the physician than reject evaluating the engineer or manufacturer. First, it is difficult to talk about normal healthiness and to know what we mean. Second, by the very nature of things some physicians are confronted with a greater proportion of difficult cases than are other physicians. Third, there are many things which the patient does over which the doctor really has no control; therefore, the doctor should be neither praised or blamed for the outcome in some of these latter cases.

Perhaps more important yet is the fact that we expect a physician or a lawyer to be professional. We assume that he collects data whereby he may judge his own effectiveness and may alter his practices accordingly. The teacher has been judged throughout his training on his knowledge of possible practices, his ability to learn new ways of doing things, and his professional drive. Once he is actually in the teaching business, he should be helped to consider himself a professional and should be encouraged to use whatever data are available—including scores on standardized tests—for his own self-evaluation.

Clearly we need to carry on research in social psychology to answer such questions as, "What are the best ways of encouraging the professional teacher to evaluate and to alter his practices constantly?" As we get more research of this nature, we shall find that standardized-test scores have a place in the welter of evidence which will be useful in bringing about changes. This, however, is a far cry from having administrators hire, fire, or promote teachers on the basis of standardized-test scores.

Dr. J. Wayne Wrightstone

It is not proper to use test scores on standard tests as the sole means of judging the effectiveness of a teacher or the effectiveness of an educational program. If the design of the appraisal program is narrow and limited, the testing program may measure only partial outcomes of the total objectives of a school.

While test results may be used as one of several types of data to evaluate a teacher or an educational program, few modern educators would defend a rating made solely on such a basis. Reliable and valid tests, by their very nature, are restricted to an appraisal of limited aspects of pupil behavior and growth. It is impossible to measure the whole result of an educative experience by any one test or battery of tests. Other data and judgments must supplement test results in a comprehensive evaluation of a teacher or of an educational program.

Dr. J. Francis Rummel

One of the approaches to teacher evaluation has been on the basis of the

changes the teacher produces in pupils. The teacher who produces desirable changes in his pupils in the most aspects and to the greatest degree is the best teacher. However, it is difficult to define what changes in pupils are desirable and difficult to determine how to measure such changes. In addition, it is almost impossible to be sure that any differences or changes observed are due solely to the influence of the teacher or to other influences.

Since a standardized test measures only a sample of a pupil's achievement —primarily his information and knowledge—it cannot reveal many of the other desirable changes that may have been stimulated by a given teacher. Because all of these factors are not taken into account by standardized tests, it must be concluded that testing has not reached a stage of development where it can be used alone for judging the effectiveness of a teacher.

It may be less serious to judge the overall effectiveness of an educational program in some rather limited respects by the periodic use of some types of standardized tests than it is to judge teacher effectiveness by the same measure. Insofar as there are tests available that measure some of the broader, more permanent types of knowledge and understanding, and insofar as they "fit" the curriculum of a given school, they may be used with caution to evaluate the educational program of that school. However, we must consider many other influences that are outside the program of the school itself.

Part of the achievement of pupils on general tests of educational development may be due to the influences of newspapers, radio, television, out-of-school activities, and individuals not on the school faculty. Thus, it would be improper to judge the effectiveness of the educational program of a school solely on the basis of standardized tests.

Dr. Warren G. Findley

Scores on standardized tests should never be used as the sole basis for evaluating the effectiveness of a teacher or an educational program. From a logical viewpoint, the true effectiveness of instruction is to be judged in terms of the changes in behavior produced in those instructed.

Restraint is urged in use of achievement-test scores to evaluate teachers, however, for a number of reasons. First and foremost, the best standardized tests measure only a fraction of the desired learning outcomes in the area being evaluated. Second, every test contains only a sample of the infinite number of questions that might have been asked and, hence, measures imprecisely whatever it does measure.

Third, there is a tendency for tests to become the end of all instruction, rather than a means to help guide instruction. If teachers are evaluated by tests, they often will teach narrowly toward those objectives which the tests are able to measure, and children often will limit their efforts to that which will be measured.

Fourth, achievement-test scores from testing at the end of instruction make no allowance for either the learning accomplished before the particular teacher began instructing the class or the effective learning ability of the students in that class.

A special use of tests to evaluate teachers is the giving of tests to the teachers themselves. On the theory that,

in order to teach a dog tricks, one needs to know more than the dog, it is reasonable to assess a teacher's own subject-matter competence. Reliance on such testing by itself would be subject to the same limitations and criticisms, already cited, regarding the use of achievement-test scores. Such reliance would be subject to the further criticism that it is what the students learn that really counts. However, it is being increasingly accepted that direct testing of teachers is appropriate and helpful in the total evaluation of teachers for employment, tenure, and promotion.

What has been said of evaluating teachers applies to evaluating educational programs by tests. Rigorously controlled experimentation, using tests as criteria, will give added conviction to conclusions reached informally by those engaged in the instructional process. Most benefit, however, will come from "quality control" and feedback use of test results to guide teachers and curriculum leaders in adapting their instructional programs in the directions indicated by tests.

Dr. J. Raymond Gerberich

It is proper to use standardized-test results in judging the effectiveness of teachers and programs only in rare and unusual situations. There are so many important and unmeasured—even unmeasurable—factors involved that the desired evaluations can be made reliably only if elaborate research procedures are substituted for testing programs.

Achievement tests measure only a portion (certainly not the largest and perhaps not even the most significant portion) of the behavioral changes in pupils resulting from instruction. A teacher who has a pupil in her class only for a semester or a year should be neither penalized because a pupil came to her poorly prepared nor rewarded because he came to her with a strong background.

An illustration of the importance of intellectual ability and socio-economic class of pupils in different schools is found in the results of a study sponsored in Connecticut by the Connecticut Citizens for the Public Schools (5). Fifty-one of the 169 towns in the state were included in 1956 in a carefully controlled study of the factors related to the achievement status of tenth-grade pupils, as measured by a battery of general achievement tests.

When the average achievement levels of the pupils in these 51 towns were correlated with the averages of the pupils on *Otis Q-S Mental Ability Test* intelligence quotients, a measure of socio-economic status, and some twelve other factors, it was found that the two previously mentioned made the major contributions. Average IQ's and the average indices of socio-economic status were found to be related to average achievement to the extent indicated by Pearson product-moment correlation coefficients of .714 and .437 respectively. These results and the findings of many other studies strongly support the view that the effectiveness of school programs cannot be interpreted by casual comparisons of achievement-test results.

The Effects of Testing on the Curriculum and Teaching

Question: Do standardized testing programs tend to restrict curriculum development and to limit creative teaching?

Dr. Warren G. Findley

The danger that standardized testing programs will restrict curriculum development and limit creative teaching is directly proportional to (1) the rigidity of the testing program; (2) the inaccessibility of the testing leadership responsible for the program; and (3) the premium put upon individual or group achievement on the tests.

The first of these factors is happily nonexistent in many programs. In many states a minimum program is required. Elsewhere the program is optional, winning its way on the appeal of its usefulness locally.

The second factor, inaccessibility, is also less common than it once was, when the planning of large-scale testing programs was treated as the province of test "experts," or, sometimes, of a single expert. Today at local, state, and national levels, testing programs are subject to the regular flow of advice, if not control, from appropriately representative committees of teachers, counselors, and administrators. In addition, the tests themselves will have been constructed by, or under the guidance of, committees of classroom teachers.

The College Entrance Examination Board is offering two wholly independent achievement tests in physics this year—one for traditional high-school courses and the other for the new Physical Science Study Committee's course in modern physics. The College Board also is taking initiative in joining or bringing into being curriculum study commissions in mathematics, science, English, and social studies with a view to insuring that new developments may be reflected as early as possible in the achievement tests offered in their entrance-examination program.

In a more positive vein, it may be said that well-constructed tests can provide guidance and stimulation toward adopting newer curriculum approaches on the part of the considerable fraction of the school systems that wait for leadership in these matters from syllabus revisions, new textbooks, and the like. Insofar as such testing can have an optional, rather than a mandatory character, the tests penalize no student for lack of specific training, but point the way to desirable new emphases.

Dr. J. Wayne Wrightstone

Properly used with other types of evaluative data, standardized testing programs will stimulate curriculum development and creative teaching. Improperly used as a sole criterion, stand-

ardized tests may restrict curriculum development and creative teaching. The danger lies not so much in the standardized test per se as in the attitudes and vision of the person who uses the results of standardized tests.

When a comprehensive program of evaluation, including tests and other appraisal techniques, is employed to evaluate the major objectives of curriculum and teaching, creativeness is stimulated. When such a program is employed, tests and other measures are used to gain insights into the effects of curriculum and teaching practices. They are looked upon as accessories to a process of experimentation, designed to develop newer and better practices. A narrow program of testing and evaluation tends to restrict curriculum development and to limit instruction to unimaginative repetition of traditional practices.

Dr. J. Raymond Gerberich

A standardized testing program, of course, can be a means of confining the curriculum to narrowly conceived and static objectives. It can be a means of suppressing creativity in teaching. Such results are not inevitable, typical, nor very probable, however, even though they are possible. Poorly conceived administrative controls over the tests to be used, on the one hand, and inept or unwarranted uses of test results, on the other hand, are the most frequent causes of these undesirable outcomes.

Pressures for the maintenance of high standards, whether at the local or state level, frequently are implemented by tests imposed upon the school by a state requirement or upon the teachers in a certain school by a school board or administrator. Such pressures are not unusual. Perhaps they are not always undesirable, particulary for college-preparatory pupils in the high school where the tests themselves are well conceived and broad in scope. Even so, their use with pupils in the grades and with high-school pupils who are not likely candidates for college admission seems to be less easily justified.

When the primary use of test results in a state-wide or local program is to compare communities in the state, schools in the community, class groups or teachers within the school, curriculum development and teacher creativity very likely will suffer. If such use is subordinate to the employment of results in the guidance and counseling of pupils and in the evaluation of the school program in the light of meeting pupil needs, rather than in terms of standards, constructive outcomes well may ensue, however.

Several years ago, a Connecticut branch of a national organization of citizens, sincerely interested in the welfare of the schools, introduced a bill into the state legislature. The bill provided for a mandatory testing program in all public schools and required the mandatory compilation and disclosure of school rankings on the tests throughout the state.

Almost single-mindedly, organizations of public-school superintendents and secondary-school principals, as well as two professional consultants to the citizens' organization, opposed the bill. Subsequently, when the bill came up for a committee hearing, the members of the citizens' group, who were most directly responsible for its introduction, opposed it and introduced a constructive substitute bill. Neither bill went beyond the committee, however.

Dr. J. Francis Rummel

It is entirely possible that standardized testing programs could stifle curriculum development and creative teaching, but it is highly improbable. The range of types of standardized tests available at the present time is so great that the evaluation of many different types of curriculum are feasible. If tests are selected to measure the objectives of education as reflected in any given curriculum—as they should be selected—there is no danger of them restricting curriculum development.

In a study of the various influences on curriculum, Sandin (3) found that standardized tests had little effect on influencing curriculum in Oregon. Only 10 per cent of 307 high-school teachers indicated that they thought standardized tests had a strong influence on the curriculum. Of 151 junior-high-school teachers, about 19 per cent indicated a strong infiuence by tests. And only 15 per cent of 774 elementary-school teachers held the same belief.

The researcher found that school superintendents, textbooks, and state courses of study had a far greater influence on curriculum development than did standardized tests. Sandin's study did not, however, identify the manner in which standardized tests did influence the curriculum in those schools where teachers reported such an influence, nor was there any indication that such an influence was undesirable.

In some school districts, a testing committee may have selected certain standardized tests that stress desirable knowledge, abilities, and skills not only for the purpose of evaluating the present curriculum, but also to stimulate some teachers to place greater emphasis on these knowledges, abilities, and skills, in their classrooms. Thus, tests can be used to lead curriculum development, to stimulate emphasis on areas of present curriculum, or to restrict curriculum development. As teachers and administrators acquire a greater awareness of the role of standardized tests and greater wisdom in the uses of them, there is less and less danger that they will restrict curriculum development or limit creative teaching.

Dr. J. Thomas Hastings

Perhaps the following answer is oversimplified, but it does seem that the danger implied by the question exists only to the extent that we *cannot* teach people who use standardized testing programs two things: (1) The establishment of the objectives comes first; and (2) the selection of tests to be used (standardized, program, or otherwise) is based upon the selection and delineation of objectives.

To say that standardized testing programs are dangerous because pupils learn to emphasize those things on which they are graded is a truism without helpful meaning for this question. There are many teachers who grade upon such things as hat-tipping and cleanliness of fingernails. Whether or not this practice is considered as restrictive of curriculum development and creative teaching depends upon the value put on hat-tipping and fingernail-cleaning. Once more, if objectives are stated first and appropriate evidence (test or other types) is sought secondly, the danger inferred by the question does not arise.

If, however, one says that standardized testing programs may be dangerous

because some teachers will have *only* these test results as a basis for curriculum ideas, then there must have been very little curriculum development or creative teaching without the tests. Where there is real interest developed in ability devoted to curriculum development and creative teaching, we need not worry about the tests restricting movement. Where neither of these attributes exists, perhaps we should give thanks that the testing programs—into which thought has gone—afford some basis for goals.

Dr. Robert D. North

As Traxler (4) noted in a recent article, the question of whether test-makers determine what is taught has been raised ever since the first objective tests were introduced a half-century ago. Interest in this important question has become intensified during the past few years concomitantly with the sharpening of competition for college admission and scholarships, in which national testing programs have a significant role.

Many educators fear that the teaching and curriculum content in some schools are slanted toward the tests used in these programs in an effort to give the students every possible advantage in this competition. To the extent that tests of aptitude or of general educational development are used in the admission and scholarship programs, special preparation of the students is of little avail, and the danger that the content of these tests will duly influence a school's educational program seems to be minimal.

Where subject-mastery tests are used in national-program competition, the possible effects on teaching and curriculum content in secondary schools may be appreciable. Whether these effects are in the direction of restrictions and limitations or in the nature of stimulation toward higher standards and enrichment is an open question.

Since the participation of a school or school system in practically any testing program is subject to the discretion of the school administrative staff, test influences that may be considered undesirable are usually avoidable. Community pressure for participation in certain programs of high prestige value cannot be completely ignored, however.

To gather information about the opinions of educators on the influence of tests, Traxler sent a brief questionnaire to 720 institutional members of the Educational Records Bureau. Of the 507 schools and colleges that replied, more than three-fourths reported that they felt the influence of tests on the curriculum and methods of teaching was slight or nil. Inasmuch as the majority of the respondents were independent schools, this finding should be interpreted cautiously. Nevertheless, it is encouraging information and, one hopes, an indication that the restricting effects of standardized tests on curriculum development and creative teaching are more imagined than real at present.

Be ashamed to die until you have won some victory for humanity.
—Horace Mann

The Scope of Written Tests

Question: How broad is the scope of written tests? Can they provide valid measurement of important noncognitive outcomes of education?

Dr. J. Thomas Hastings

This question seems akin to another one which is asked in other quarters: "How effective can Christianity be in establishing better relations among men?" The reason that the two questions seem somewhat similar is that there exists one clear-cut answer to both: "We don't know—simply because, to date, no one has really tried."

Assume that an art teacher has established relationships with a group of pupils in such a fashion that the children are motivated to attempt to grow along the lines set forth by objectives for the course. Assume further that the children and the teacher feel that they are working together toward those ends. In such a situation, a series of questions by the teacher will bring responses which will be a good index of the degree of interest and appreciation of members of the group and of the group as a whole. These questions would concern the extent of the pupils' participation in artistic production, the extent of the pupils' voluntary study of objects of art, and the extent of conversation they have in regard to art and artistic matters generally.

On the other hand, if the same questions are asked in an atmosphere which is conducive of mistrust or fear of ego-injury, the results generally will index the noncognitive outcome of "adaptive deception"—an outcome which few schools would care to publicize as an objective.

"Appreciation," "responsibility toward others," "attitudes toward study," and "desire for a fuller life" are examples of words and phrases used to label important noncognitive outcomes of most educational endeavours. These outcomes are, however, exceedingly difficult to define in operational or behavioral terms in such a way that each member of a group of several people will agree that a given behavior does represent truly the concept intended by the phrase or word. The extent to which this is so makes it quite difficult to collect information of any sort concerning this kind of behavior.

The types of outcomes which can be measured by written tests depend upon the creativity of the test-makers (local or external) and the atmosphere, including attitudes toward the function of tests, in the local classroom. When we reach the point where teachers, administrators, pupils, counselors, and parents look upon tests and test results as the everyday sampling of behavior which is necessary to direct, control, and predict tomorrow's activities, then there will be many types of important noncognitive outcomes which can be indexed by written tests.

Dr. J. Francis Rummel

The cognitive outcomes of education include those which represent knowl-

edge, intellectual abilities, and intellectual skills. The noncognitive outcomes of education includes those which represent interests, appreciation, attitudes, values, adjustment, and manipulative or motor skills. In measuring the cognitive realms, test items may be constructed for which a pupil either writes in an answer or identifies a response that has been predetermined as right or wrong. The scope of written tests in this realm is extensive, indeed, and objective-type test items have been developed to measure most of the cognitive outcomes of education quite adequately.

The measurement of noncognitive outcomes of education is more difficult and requires more subtle techniques than the measurement of the cognitive outcomes. In measuring the noncognitive realm, there are usually no right or wrong answers that may be identified. In fact, it is difficult to describe the behaviors appropiate to the noncognitive outcomes of education, since the internal or covert feelings and emotions are as significant as are the overt behavioral manifestations of an individual.

The written answers given to questions asked or to situations presented, however, may give some indication of a person's attitude, or interest, or adjustment, or some other aspect of his personality. The interpretations of such written answers usually require extensive training in clinical psychology. For this reason, they ordinarily are beyond the scope of abilities of most classroom teachers.

In general, then, we might conclude (1) that the scope of written tests for the measurement of noncognitive outcomes of education is very limited at this time and (2) that teachers should be quite cautious in the interpretation of those written tests that are now available for some of the outcomes.

Dr. J. Raymond Gerberich

Major cognitive outcomes of learning —factual knowledges, concepts, and understandings—are among those most satisfactorily measured by written tests. These outcomes require the learner to use primarily his intellectual equipment in dealing with knowledges at several levels of breadth and complexity.

Two other areas of learning can be distinguished as noncognitive. These are the area of skills and the area of tastes and preferences, sometimes termed psychomotor and affective areas. The issue, then, seems to be whether written tests can provide valid results in these areas of noncognitive learning.

Many types of skills, such as those involved in languages and mathematics, can be effectively measured by the use of objective paper-and-pencil tests. However, many motor skills or applications of motor behavior—handwriting, typewriting, squaring-up a board, or baking a cake—are most effectively measured by objective performance tests or techniques rather than by written tests.

Such emotionalized tastes and preferences as attitudes, interests, and appreciations represent the second area of noncognitive outcomes of learning. Attitudes and interests are subject to reliable measurement by written objective tests, even though the results often fail to be accurate indices of subsequent conduct. Appreciations, those highly personal feelings of satisfaction resulting from gratifying experiences, seem to be unmeasurable in any direct manner, by written tests or otherwise. There are no precise standards by which re-

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(Signed) MAL PARKS, Jr., Bus. Mgr.
Sworn to and subscribed before me
this 28th day of September, 1960
(Seal) Marian F. Newman, Notary Public
(My commission expires March 19, 1963)

sults from testing attitudes, interests, or appreciations can be evaluated appropriately.

A knowledge can be evaluated in terms of its accuracy, and a motor skill can be appraised in terms of its quality. Yet there is little agreement concerning the appropriate attitude toward a certain controversial social issue; concerning the appropriate interest in a particular vocation or specified avocation; or concerning the appropriate appreciation of Beethoven's Fifth Symphony, a *pas de deux* in ballet, or a Thomas Wolfe novel. Thus, even though some if not all of the noncognitive outcomes of learning can be measured reliably by the use of written tests, standards cannot be applied properly in giving precise meaning to some results, particularly those for tastes and preferences.

Dr. J. Wayne Wrightstone

The scope of written tests is broad, both for cognitive and noncognitive outcomes of education. In recent years, written tests have explored new areas of cognitive factors in multifactor and differential aptitude and achievement tests. Equally important, tests of such noncognitive factors as interests, attitudes, and personal-social relationships have been constructed. Educational- and vocational-interest inventories have become aids in the guidance process Attitude scales have been used in a variety of educational situations. Personal reports and sociometric methods, used by competent practitioners, provide insights into the dynamics of personal and social behavior and relationships of pupils.

The validity of the various tests, inventories, and other measures of non-

cognitive outcomes of education is more difficult to establish than the content validity of achievement tests. The fault lies not only with the written test, but also with the vague and sometimes controversial definitions of noncognitive outcomes of education. Studies of the validity of interest and attitude inventories and sociometric methods reveal promising results. The validity is sufficient to justify the use of these tests when combined with other relevant data of the individual's behavior in noncognitive areas of education.

Dr. Warren G. Findley

Written tests already have demonstrated their effectiveness and usefulness in evaluating the cognitive outcomes of education. They have been used effectively to measure the higher mental processes of reasoning with and applying learning to new situations and to measure skill in interpreting textual, tabular, and graphical materials in which the subject is presented.

The skill of writing effective prose will yield to measurement and scaling through extensive work samples, spaced out over time and sufficient in number and length to obtain dependable results. Writing for different audiences may take its rightful place as one dimension in this evaluation.

Written tests also have been developed to appraise vocational and personal interests. These instruments may be considered inventories or questionnaires rather than tests, because they involve primarily the expression of choices or preferences rather than knowledge. We may expect refinements in this area—especially in the linking of preferences expressed in early schooling with later preferences and activities.

Personality tests may be expected to continue to claim the attention and efforts of researchers because of the demonstrated significance of personality attributes in all aspects of living. At present, those personality tests that show direct relevance to functioning personality are eminently "fake-able," as are interest measures. Extensive and profound research should produce progressively more subtle and indirect measures of significant traits.

For the moment we may express greatest hope for refinement in measuring cognitive outcomes by written tests. The other areas still present a wholesome challenge to the insight and ingenuity of test-development teams.

BOOK FOR YOUNG READERS

PLANTS TODAY AND TOMORROW. By Margaret O. Hyde. Illustrated by P. A. Hutchinson. New York. Whittlesey House. 1960. $3.00.

Young people will find this book exciting and most informative. The basic facts about plants and their many varieties are explained in the light of their importance for human life. The most recent experiments with light and growth substances will stimulate the interest of budding biologists. Plant diseases and their cures; plants as a source of medicine; and the way biologists are exposing plants to atomic energy in strange and carefully controlled gardens—these are a few of the topics discussed.—Paul Zankowich

Literature for Space-Age Children

NILA BANTON SMITH
Professor of Education and Director
The Reading Institute, New York University

THE child of today lives in a mechanized world. His toys are miniature representations of rockets, jets, and space ships. His home is filled with gadgets for cleaning, cooking, washing, heating, and air-conditioning. He travels by automobile, train, or airplane. Much of his entertainment comes to him over television, radio, and cinema.

In this age of mechanized living, litterature is an exigency. The child, immersed in his mechanized surroundings, must have an opportunity to obtain the wholesome recreation and aesthetic satisfaction that comes from exploring the fascinating world of stories and poems. He must have an opportunity to enjoy and interpret human experience as portrayed by master writers. Truly this nourishing refreshment is necessary to offset the mechanistic effects of machines, gadgets, and speed.

Why does literature hold so much promise for children in the Space Age? What specific values accrue from literature in a child-growth program at the present time? The remainder of this article will be concerned with a discussion of these questions.

Personality Development

Personality is an integration of social, emotional, and behavioral characteristics. These characteristics emerge as natural endowments interact with experience. Literature provides an inexhaustible well of human experience, from which children may take deep draughts of life and living. It follows then, that one of the most important functions of literature is to help children relive the experiences of others and thus to deepen and broaden their own personal experiences.

Literature affords an opportunity to participate sympathetically in the viewpoints, problems, and difficulties of others. It helps the child to understand culture patterns, both those which are currently in existence and those of the past. It enables him to interpret his own needs for security, love, companionship, success.

In addition, literature aids therapeutically in solving personal problems. As the child reads literary selections, he is bound to encounter characters who have had problems similar to his and who have successfully solved these similar problems.

Literature also contributes to the improvement of attitudes and behavior toward people, animals, cultures, creeds, beliefs, occupations, institutions, country. As evidences of some of the personality values heretofore mentioned, the writer submits a few quotations resulting from a study entitled "Some Effects of Reading on Children."[1]

1. Nila Banton Smith, "Some Effects of Reading on Children," *Elementary English*, Vol. 25, No. 5, (May, 1948), pp. 271-279.

Cynthia, Grade 6, wrote:

"The story of *The Blind Colt* impressed me very much. I never thought that blind animals could get around or play tricks. I thought they should be killed. But now I know that with patience some blind animals can be taught to do the things they need in order to get along in life. They must have companions, though, who are interested in helping them.

"Animals are something like people.

"This summer when I was on a trip I saw a blind man playing a violin and traveling by himself and I thought of the little blind colt.

"Whenever I see a blind person again I'm going to act the same way as if he wasn't blind. Instead of feeling sorry for him, I'm going to admire him for his courage in learning to do things."

Janice, Grade 7, in writing about "America For Me" said simply:

"This poem made me realize how nice it is to be an American."

Richard, Grade 8, wrote:

"I didn't realize very much what my country meant to me or what it meant to other people until I read *The Man Without A Country.*

"When I read this, I realized that I was lucky to live here in this free land and am thankful that I don't have to live on a boat."

Roger, Grade 6, wrote:

"I had always heard that Sitting Bull was a terrible Indian and that he was always killing people. Then I read the book *Sitting Bull.* It told how he had held back from fighting as long as he could but at last he had to fight and when he did he was a terror. After he made a treaty someone accused him of trying to start a war and he was killed in a cowardly way.

"I learned that Indians have honor and now I have a greater respect for them than I did before."

Cynthia changed her attitude and behavior toward blind people. Janice and Richard developed a deeper love for their country, and Roger came to have better attitudes toward another race. Surely literature greatly helped these children to improve their personalities.

Creative self-expression which often buds out of communication with literature is a salutary agent in developing personality. Two important elements of creativity are, first, uniqueness, inventiveness, making something new and different; and, second, integration, weaving personal feelings, attitudes, and generalizations into some form of expression. Creative experiences involving these elements lead to discovery of dormant powers, draw upon reserves of untouched artistic emotion, develop a capacity for clarifying concepts and for arriving at basic generalizations. These new powers summoned to the surface through the medium of literary experiences release tensions, bring satisfactions, and induce personalities to unfold and to bloom.

As children derive pleasure from reading literary materials, they naturally feel compelled to prolong this pleasure through other arts closely akin to literature. For instance, they may wish to dramatize a story. They may want to draw, paint, or sculpture characters and scenery. They may want to write other stories and poems of their own, and even to set their poems to music.

The reading of literature in itself is a creative experience. Even so, however, it serves as a springboard for creative activities expressed in several other forms of symbolization.

To summarize: literature contributes to personality development by promoting understandings, by improving attitudes and behavior, by helping to solve personal problems, and by stimulating creative powers. No other type of material offers such rich and varied possibilities for nurturing the unfolding and shaping of personality!

The Stimulation of Interests

One of the most important areas of growth in reading is the area of interests. Without interests all of the laborious work of developing reading skills would be of no avail. Unfortunately, many children and adults *can* read, but yet they never do read. What good are reading skills if persons do not use them to enrich their living? Growth in skill proficiency is important, but of equal significance is the development of permanent, carry-over interests. These interests are necessary to impel an individual to make efficient use of reading skills in serving his life needs.

At present, we must strive as we have never striven before to develop wide, permanent, carry-over interests in reading. Mechanized communication agencies are striding across the reading habits of America with a heavy tread. Reading is faced with strong competition. As already indicated, radio, television, and movies almost completely satisfy many persons' desires for entertainment and information. If reading is to continue to function as the most valuable means of tapping our inexhaustible supplies of printed communication, then we must put forth far greater effort than ever before to establish abiding interests.

One of our best allies in achieving this goal is literature. Literature is entertaining. Entertainment is enjoyable. That which is enjoyable is interesting. When a child first experiences pleasure in literature, his appetite is whetted for more literature. Providing him with stories and poems geared to his interests, chronological maturity, and reading ability is one of the surest ways of encouraging him to delve ever more deeply into his literary inheritance.

Interests developed through literary experiences are likely to continue throughout elementary school, secondary school, college, and even throughout life. If literature had no function other than helping a person to establish lifetime interests in reading, this value alone would place it close to the apex of curricular offerings.

Providing Functional Information

Children have many intellectual curiosities. Their quest for knowledge leads them to seek information about bugs, snakes, birds; stars, sun, moon; seaweed, shells, fish. They want to know about airplanes, rockets, trains, boats, and automobiles. They are eager for enlightenment about human beings, events, relationships, occupations, ways of living, castles, heroes, battles, and wars. This thirst for information is satisfied in many ways through the medium of literature.

One of the unique characteristics of literature is its diversity of content. It doesn't confine itself to one specialized area of knowledge. The writers of literature do not pour their stories and poems into subject-matter compartments. They write about things that touch them deeply at the moment, things that they feel impelled to share with others.

Authors write on topics as broad as life itself—as all-inclusive as children's searches for knowledge. In view of this fact, children find literary content a very satisfying source of information to answer numerous questions that prompt them to read.

Literature does far more, however, than provide information in the factual sense. It presents information in meaningful situations, rather than in organized subject-matter categories. For this reason it has a special advantage in broadening concepts, deepening insights, clarifying human relationships, arriving at social and philosophical truths. In other words, it provides knowledge far beyond facts—it enables facts to live and to function.

Another information value inherent in literature is that knowledge is presented in interesting, dramatic, and colorful settings which appeal to children's interests. Many children, who are reluctant to read books designed to provide direct instruction, become completely absorbed in stories and poems that indirectly provide information and insights. Trickling interests born in these integrated situations, if carefully guided, may well lead to the purposeful reading of textbooks or encyclopedic materials.

Thus literature serves in many ways, not only to provide facts, but also to stimulate and satisfy the child's quest for knowledge and wisdom.

Curricular Enrichment

Although literature never should be used for teaching subject matter directly it may serve admirably to supplement, extend, and reveal content in the various curricular areas. I have already spoken of the close relationship of literature to art, music, drama, and creative writing and have indicated its overflow possibilities in these artistic areas. Social studies and science are also particularly benefited through literature.

The subject matter of literature is the subject matter of life, and life's subject matter lies almost entirely within the content areas of social studies and science. Consequently, literature, social studies, and science have a great deal in common.

Let us examine briefly how literature may serve to enrich the social-studies area. Literature deals with people, their work and recreation, their sorrows and joys, their relationships and individual problems. Consider Mother Goose, for example. In listening to or reading Mother Goose, children learn about planting and reaping, grinding flour, milking cows, shearing sheep, tending garden, making cheese and butter, and many other activities. They visit farms, villages, cities, markets, mills, fairs, and shops. They meet kings, queens, farmers, fishermen, shepherds, blacksmiths, and milkmaids—all as they laugh or weep, talk or sing, work or play together in harmonious interpersonal relationships.

Mother Goose, of course, occupies but one tiny niche in the great world of literature. Many different types of literary materials—folktales, legends, modern fanciful tales, realistic stories, poetry—all have potentialities for social-studies enrichment.

Children studying the lumber industry, for instance, gain invaluable insights by reading about legendary Paul Bunyan and his blue ox. Children studying pioneer life gain rich understandings by reading such stories as

"Mr. Meeker and the Indians" by Miriam E. Mason and those studying transportation by reading "The Locomotive and the Horse" (story of the first run of the Baltimore and Ohio Railroad) by Thomas Bowles. Children studying city life certainly should have an opportunity to read the delightful little poem, "The Buildings," by Rose Fyleman. One could go on endlessly in giving such examples. Perhaps enough has been said to establish the point that literature is an inexhaustible source of enrichment for the varied subject-matter areas in the social-studies curriculum.

Science is equally fortunate in having strong reinforcements in literature. Consider Mother Goose again. In listening to or reading Mother Goose, children make repeated visits to farm, lane, field, seashore, and stream. They meet and learn about bird-life and barnyard fowls, fish and turtles, spiders and flies. They witness a fascinating procession of farm animals, such as lambs, sheep, colts, horses, calves, cows, and donkeys. Truly, Mother Goose may be called the child's first "Natural History."

The whole world of literature, of course, is pregnant with possibilities for enriching science. The child can greatly enrich his science learnings about animals by reading "Paddle Tail and Water Baby" by Jane Tompkins. He can enrich his appreciation and understanding of insects by reading "Firefly" by Elizabeth Madox Roberts; of wind and weather conditions by reading "Bumbershoot Wind" by Mary Calhoun; of modern inventions by reading "The Airplane" by Annette Wynne, "My Rocket Ship" by Frances Gorman Rissser, and "David Makes a TV" by Vera Pickard. These, of course, are merely random samplings of the abundant and fruitful materials that literature affords to supplement and enrich the area of science.

As previously indicated, literature never should be used for the purpose of teaching subject matter in the various curricular areas. On the other hand it serves as a deft and subtle accompaniment to subject matter and provides immeasurable aid in supplying additional information, broadening concepts, and deepening appreciations.

Indirect Contribution to Skills

A child learns to read by reading somewhat as the swimmer learns to swim by swimming. The more enjoyable reading he does, the more proficient he becomes in using reading skills. No teacher ever should use literature as a basis for teaching reading skills, but she certainly should use literature as a medium for applying skills in joyful, purposeful reading. Care must be taken, however, to make certain that all literature falls within the readability level of the children for whom it is provided. The frustrating experience of trying to read literature that is "too hard" may discourage a child from making attempts to read at all. Any literature which is written above the reading level of children should be read or told to them by the teacher.

The interest factor in literature is especially conducive to fluency and speed in reading. Even the word reader forgets to loiter over each symbol when he becomes absorbed in a story. Instead, he races over the pages to find what will happen next, and in his eagerness he takes in whole meaningful groups of words.

Folklore is particularly valuable for reluctant readers. Repetition of phrases,

simplicity of characterization, swiftness of plot make for easy reading. Too, the simple conversation in folklore helps to bridge the gap between oral reading and silent reading, a gap that the retarded reader often finds difficult to bridge.

Conclusion

Thus literature serves children in inestimable ways. Many people today, realizing the intrinsic worth of literature in this mechanized and troubled era of history, are combining their efforts to make the beneficent influences of literature more widely available. Educators are urging more abundant supplies of literature for classrooms and more skillful use of literature by teachers. Publishers are making available excellent story books for children and graded anthologies filled with rich selections for classroom use. Trained librarians, literary people, and childhood specialists are co-operating wholeheartedly in advancing and disseminating literary values. All these efforts are evidences of a growing realization of the unlimited values of literature. The present literary movement deserves our hearty support!

BOOK REVIEWS

PLANNING YOUR SCHOOL BUILDING DOLLAR. By Carl H. Stautz. Philadelphia. Chilton. 1960. $2.75.

In these days of high building-construction costs, limited state aid, and questioned school budgets, school boards and school superintendents have to use what funds they have to the greatest possible advantage. This book is a simple, direct, and readable explanation of how school people can work with architects to predetermine the exact cost of any school building project.—W. P. S.

TECHNIQUES AND DIAGNOSTIC CRITERIA FOR THE OPTOMETRIC CARE OF CHILDREN'S VISION. By G. N. Getman. Duncan, Okla. Optometric Extension Program Foundation. 1959.

Technical in nature, this manual deals with the concept ascribed to modern optometry in rendering programmed and preventive vision-care service. Teachers and others will find its basic outline helpful in gaining a better understanding of how a human being —child or adult—interprets what he sees through more adequate visual performance. The author describes step-by-step procedures in the recognition of developmental and operational processes inherent in a child's visual performance. The content of this manual covers two series of tests designed for testing children of preschool age, children of early school age, and children of any age or degree of retardation. The logic in the gestalt of philosophies brought about by optometry, child development, psychology, and body mechanics is self-evident throughout the book's fifty-three pages.—Martha S. Stem

MODERN PHYSICS. By Charles E. Dull, H. Clark Metcalf, John E. Williams. N. Y. Holt. 1960. $4.96.

This is another volume in the carefully prepared "Holt Science Program" texts. Designed for high-school use, this book abounds in instructional aids which are helpful to both student and teacher. The units have been especially well prepared as to subject-matter content and approach. Throughout, the "language" of physics is stressed. In addition, mathematical relationships are indicated and given much emphasis. The illustrations and diagrams are numerous, clear, and helpful. This text can be enthusiastically recommended in these days when physics is being recognized as a vital subject.—W. P. S.

All Campus Deadwood Is Not of the Genus Arbor

VERNON W. STONE
Head of Department of Business, Maryland State College
Princess Anne, Maryland

At least three distinct staff groups are in evidence with respect to the internal operation of the college or university. Broadly classified, they are administration, faculty, and non-teaching staff. These groups, severally and jointly, contribute in a vital way to the attainment of the institution's objectives. Clearly, there are recognizable strengths and weaknesses associated with such groups. Each group, from time to time, is the subject for criticism —favorable or unfavorable.

According to one Websterian definition, a college is "a society of scholars incorporated for study or instruction, especially in the higher branches of knowledge . . ." Hence, it would appear, at least historically, that higher-educational institutions originally entered the scholastic arena without the benefit of any one of the previously cited groups. One group — the faculty — gained its rightful place early; the other two represent comparatively recent additions to the "society."

The writer addresses himself to the most important segment of the operating staff, the *sine qua non* of today's college —the teaching faculty.

Supporters of professional organizations continually exhibit boundless energy and interest in such matters as faculty salaries, academic freedom, tenure, and administrative relationships. Purportedly, attention to these matters is designed to elevate the profession by means of more favorable working conditions and increased security for the functionaries. Usually, such organizational efforts entail only dealings with administrations. Efforts toward amelioration should not be so confined.

What about the deadwood—the relatively few, but noticeable, inefficient members of the faculty—who, despite noticeable inadequacies, are also the beneficiaries of packaged improvements? The writer hastens to point out that he intends no implication to the effect that the deadwood factor should be a deterrent in attempting to raise the morale of the capable majority, characterized by preparedness and dedication.

A faculty member's rank is of little consequence in effecting the dichotomous classification. Yet, it is recognized that many of those individuals who hold the higher ranks—associate professor and full professor—are excellent candidates for campus standard bearer of the derelicts. Well known are some of the characteristics which evoke the deadwood label.

Personal Convenience

Do you know a faculty member who rebels at the prospect of a Saturday class, an eight-o'clock class, a Tuesday-

Thursday class, or an afternoon class? He wants a tailor-made schedule, preferably with all of his classes scheduled between nine o'clock and noon on the Monday-Wednesday-Friday circuit.

Of course, he gives every indication of being oblivious to the fact that faculty members are merely by-products of the educational situation. Without students, the supply of teaching personnel would unquestionably exceed the demand. Perhaps some schools have been established specifically to provide faculty employment. Honoring such a probability, we can successfully wager that such schools are now defunct, the greatest loss having accrued to the faculty.

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A faculty member who grades in good faith—no matter what the result —is not the focal subject here. On the other hand, undefensible, subjective grading— high or low—provides a false sense of security for the evaluator and

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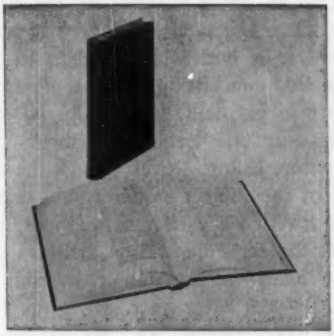

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Static Teaching

Do you know a faculty member who teaches the same material, in the same way, from the same outline, year after year? He is noticeably deficient in information concerning dynamic developments in his field. Ordinarily, he employs only one teaching method—the expository lecture—even though the nature of the subject matter would better lend itself to a variety of methods. He reads the same quotations, delivers the same jokes—all at the predetermined points—year after year. He gives the same examinations, and his classes—predictably—perform in substantially the same manner year after year.

Widely read students, possessed by an inquisitive, practical approach to learning, are discouraged when they attempt to inject a degree of recency into the class sessions. It can hardly be refuted that students who are spending precious money, time, and effort under our subject instructor would probably do as well or better without his presence.

Check Collection

Do you know a faculty member who puts forth a minimum amount of professional effort, but a maximum amount of non-professional effort to be the first in line, so to speak, to receive his pay check? He is actually a jobholder. He does noticeably little to uplift the college and/or the students. In addition, he is overly critical of everyone and everything calculated to aid in implementing the institution's program.

The writer submits that these are but a few of the harnessable elements which tend to characterize some of the campus deadwood. Furthermore, he is of the opinion that various professional organizations, as organized bodies, are in an enviable position to help alleviate this situation. Through local chapters of a given organization, the faculty ranks should be systematically policed.

Such an effort will aid tremendously in eradicating a black mark with which the entire profession is saddled. Too, such a self-initiated step would, to be sure, strengthen our cause and maximize our efforts to gain first-class professionalism, which is long overdue.

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Basic Concepts and Practical Goals in Education

WILLIAM J. SHIMMON
Assistant Superintendent of Schools
Yonkers, New York

THE launching by Russia of its two "Sputniks" was considered in many quarters a serious blow to both our international prestige and our internal security. Bitter criticisms were leveled at many groups, but our educational system came in for especially heavy attack. It was felt, although with little actual reason, that the Soviet accomplishment was clear evidence of the superiority of the Russian system of education over our own. Millions of words were written and spoken about the inadequacy of our schools, particularly with regard to our science and mathematics education.

Nobody seemed to have remembered, in the heat of the moment, that American science and technology were, and still are, the most advanced in the world. Furthermore, technological discoveries, changes, and improvements customarily have been utilized in the United States to improve the lives and the standard of living of its citizens—and only secondarily have been adapted for war uses.

In Russia, on the contrary, as in all dictatorships, the security of the group in power and the enhancement of its prestige at home and abroad, by propaganda and other more stringent measures, is the first order of business. The daily lives of the people are bare of comforts to an extent hardly realized here in this country. The Russian people themselves have no more to say about education, in any of its aspects, than they have to say about other important areas in their daily lives.

Our system of schooling, on the other hand, has always been a matter of public concern, because the personal well-being and improvement of all of our people have been among the goals of education from almost the beginning of our national life. In fact, since education is a public responsibility in this country, it is right and just for the public to take a serious interest at all times in the goals and methods of education.

However, inasmuch as this is an important area in our people's lives, it is neither wise nor desirable to make sweeping changes to meet what might be only a temporary emergency. Let us point out that, since we put our "Explorers" into space, the torrent of criticism of our education has suddenly diminished. Were we really so bad before, and are we suddenly so good now? The truth about our educational system must lie somewhere between the two extremes of utter worthlessness and glowing achievement.

Historical Origins

Perhaps we can get a better perspective of what is true about education today and what might be practical suggestions for worth-while changes if we

summarize a little bit of the history of our present system of schooling.

A review of the origins of American education indicates that the development of the *whole* individual was considered the province of education. The provision of good moral and character training was considered an essential aspect of the educational process.

The world's first and greatest experiment in democratic living, initiated by the American Revolution, emphasized the need for an enlightened electorate in the operations of democracy—a need more, not less, important today than ever before. Democracy in its essence is a dynamic form of society; that is to say, the desires of the people become effective forces. American beliefs are based on a philosophy of freedom and respect for individual personality. Nobody is expendable in a democracy. Our ideas of what is good and desirable educationally also must stem from this conceptual background.

It was believed, in the beginning, that American society had a moral obligation to provide the individual with means for personal growth. This belief influenced public policy in education at all levels. It was held that education should help to extend the spiritual and mental development of an individual so that it would add to his dignity as a person and would help him to realize his potentialities and responsibilities.

This educational aim extended beyond providing the individual with the means of material advancement only. In higher education, a program based on this philosophy is termed "liberal education," as contrasted with education aimed only at providing the individual with skills to earn a living or to raise his economic status.

A liberal education need not be confined to a college education, however. Everything learned by the individual from kindergarten through college, which can help him to be an effective, happy, constructive human being, is a liberal education.

A trained intellect is an attribute which can be built into a machine, a Univac. A person, on the other hand, needs spiritual values, an understanding of himself and his universe, a knowledge of morality and ethics on the level of experience and behavior, as well as vocational and professional training, if he is to function in a democracy. These were, and fundamentally still are, our educational goals.

Changes . . .

Let's see what happened to American education in the nineteenth and twentieth centuries. As the many social, technological, and political changes of the nineteenth century began to be experienced in this country, the character of education at all levels began to change. American democratic ideals and initiative led to the provision of free public education, at least through high school and, in some instances, through college. We take free education as a matter of course here; hence, some of us may have forgotten how unique it is throughout the world, even in the present century.

Liberal Arts colleges, to keep up with the needs of democracy, were forced to expand their curricula from the rigid program which encompassed all of the knowledge available at the outset of our national life—the classics and theology, in other words—to include developments in science, mathematics, history,

modern languages, sociology, and psychology, among other areas. They began to provide training for a number of professions and vocations.

Land-grant colleges and state universities, on the other hand, originally organized with the help of federal funds to provide only the technical and vocational training needed by the populace, began to include broadly cultural, nontechnical courses as prerequisites to technical education.

The purpose of the changes in both areas was to discharge a democracy's obligation to provide the best education for its citizens. An enlightened, educated citizenry could and would maintain a free democratic country where the needs and rights of each individual would not lose their significance.

. . . *And More Changes*

When the twentieth century got under way and our ideal of free public education began to reach achievement, especially on the lower levels, our schools had to begin to accommodate a huge influx of young people. These students came from a variety of homes and backgrounds, equipped with widely differing skills, capabilities, and aims.

It was at this point that our system of education began to show signs of strain. The difficulties were psychological and economic. New developments in the field of psychology made it clear that there were wide individual differences in learning capacity. How to provide differentiated educational experiences to help children make the best use of their abilities was, and still is, an educational problem.

An added complication was the fear that to take account of the principle of individual differences would imply an aristocracy of the intellect. As a democracy, historically and philosophically opposed to aristocracy, a distaste for the so-called egghead was acquired.

Our economic problem in financing education stemmed from two sources. What the community was willing to supply in the way of educational facilities was only occasionally related to its financial capacity. The values of the members of the community; their view of the importance of education; their understanding of the intellectual and psychological needs of children and adults; their goals as individuals, as well as members of their group—all had an important bearing on what kinds of schools were provided and what these schools were allowed to offer.

The second economic difficulty had to do with the teaching personnel. As the schools began to deal with larger masses of students and to offer a fairly wide variety of courses, the numbers of teachers employed and the training of those teachers became more and more important.

Teaching as a profession has not been respected to any great extent in this country. Moreover, teachers, whether in public schools or in colleges, have been very poorly paid. This condition may be related to the fact that a group of noneducators, ordinarily more alert to the cost of an operation than to its meaning and values, usually is charged with the responsibility of organizing and maintaining the educational system of a community. The educators are the administrators of the policies laid down by such a group.

In addition, Americans have achieved much as a nation by being a very practical people, with *doing* having had

much more importance than *knowing*. Therefore, those who must learn and those who must teach have not been well regarded.

As the twentieth century has progressed, technological development has paid off in tremendous material benefits to our nation. The ordinary citizen, however, is only dimly aware of the impact of education on his daily well-being and of the relations of education to technological advances.

It is ironic that education, far from being responsible for our ills—as we have been told recently—on the contrary is responsible for most of our benefits and advantages. As citizens, however, we have failed to recognize the part played by our teachers. We are still living under the illusion that we can procure all of the benefits of progress in education at very little cost.

It is also true that since technology has become so important for us, we have paid increasingly less attention to the contributions of the arts, literature, and music to the maintenance of a psychologically and sociologically healthy nation.

Staying within the spere of the humanities as areas of professional functioning has brought very few rewarding outlets. One of the few opportunities offered, one still quite unrewarding financially and prestige-wise, is teaching.

But in the area of the teaching of mathematics and science, schools have come into direct competition with business and industry for the services of trained personnel. The result has been an increasing shortage of teachers in this area. The problem is not the simple one, however, of offering more money to teachers in the desired area in order to entice them. If the teaching profession generally is held in poor regard, no one is going to be too comfortable in any area of teaching. The profession will not customarily be an enthusiastic first choice of the most desirable people.

Furthermore, goals of education in a democracy must be more profound and more spiritual than in a dictatorship. In addition, our greatest advantage as a nation has stemmed from our encouraging individual initiative, enterprise, flexibility, and creative thinking. In view of these facts, we must try to get some of our most talented individuals into teaching by offering rewards in economic and personal satisfaction, which a highly intelligent, creative individual can appreciate and for which he will work.

Suggestions for Future Change

Judging from reports of recent surveys of education, it appears that our elementary and secondary schools are doing a fairly effective job of providing the kind of education that a democracy considers important. There are, however, a number of areas in which improvements can and are being made.

We need to employ more systematic methods of adjusting education to the varying abilities and interests of children so that they will make the best use of their capabilities. One method of handling the problem might be to use better techniques for identifying and teaching slow, average, and gifted children, and children with special problems and handicaps. Another method would be to provide differentiated curricula from elementary school through high school and college.

Offering differentiated curricula to homogeneously grouped children in the elementary school, however, should not

mean cutting down on essential subjects or drill for any child. All children, whether in slow, average, or bright groups, need discipline in learning.

Bright children will need proportionately less time on fundamental drill than the others. Adjusting drill to the speed of learning of the different groups will not keep gifted youngsters at dull tasks for longer than required, but it will enable the slower students to spend the extra time that they need on routine essentials.

The elementary-school course of study for the gifted might perhaps be reduced a whole year, inasmuch as gifted children are capable of learning more materials more rapidly than average children. This reduction of time might be done without sacrificing or skipping over basic subjects.

The question of homework also comes up here. It may be important to include the assignment of homework again in schools where none is being assigned at present. In view of the heavy demands in this area to be made later on in the child's schooling, it might be advisable to train him in good work habits, to provide him with essential practice, and to initiate in him self-direction by requiring daily homework beginning early in the elementary school.

In an era in which science and technology are very important, science education on a variety of levels should be introduced early in the child's schooling.

In New York State, very recently, science has been made a basic subject required of all children in the elementary school. At this school level, pupils are given a general orientation to the meaning and value of science in our daily lives. This is followed in junior high schools by courses in general science for all students. For junior high as well as for senior high schools, the state has been supplying new, up-to-date syllabi for all subjects, including mathematics and science, for several years. Some of the schools have extended and deepened the general requirements in these syllabi to provide the fullest possible programs for students.

Differentiated Curricula

In the general academic high school, however, a very desirable change might come in the direction of offering differentiated curricula and diplomas so that the most and least able, as well as the average students, will be able to benefit from a high-school education.

For students who lack ability for, or are not interested in, a college education, a general terminal education could be offered. All the important basic subjects would be included, but the requirements in preparation and course work would not be on the level of difficulty of a college-preparatory course. Mathematics and science courses would not be of a technical nature, for example, but would be directed toward giving students an understanding of basic concepts in these two areas. Electives and/or work-study programs, which will enable these students to have a vocational direction at the completion of their course of study, also should be provided.

A second curriculum, a general academic one, would be designed for students going on to a college, but not planning to major in science or mathematics. This program would include basic courses in mathematics and science, but would concentrate mainly on the humanities and social sciences.

A third curriculum would prepare

prospective mathematics and science majors for college. The program offered would include, in addition to required courses in English, social studies, languages, etc., heavy concentrations of elementary and advanced sciences and mathematics.

Diplomas would indicate which curriculum had been followed, and marks achieved by a student would show his standing in his own curriculum.

In order to help students to select the curriculum for which they are best suited, more counseling and guidance facilities would have to be made available to them on all school levels.

It also might be advisable for colleges and high schools to plan together in order that joint decisions can be made in developing integrated programs of study.

In addition, existing technical, vocational, and commercial high schools would continue to offer their special programs. Communities which do not provide separate facilities in these areas should include them in a comprehensive high school, also offering the curricula previously described.

As far as the role of teachers in the learning process is concerned, even well-trained, experienced, good teachers need help in order to discharge their responsibilities effectively. Good supervision and in-service orientation to advances in subject-matter and pedogogical techniques will help them to keep alert and flexible.

Parents also have a vital role in the learning process. A good home will offer moral and spiritual security, as well as material comforts, to the child. The best motivation for good learning is the affection, interest, encouragement, guidance, and enlightened discipline provided by the parents.

Conclusions

In summary, then, the following are some of the conclusions to be drawn:

If an enlightened citizenry is to be developed, a democracy's goals in education must include values which go beyond the immediate and the material.

If the best interests of the country and the individual are to be served, the whole community, not just the parents, must contribute to the development of good schools. People not only must be ready to give time and effort to the problem but also must recognize that good education cannot be procured at cut-rate or bargain prices.

Improvement in education requires an understanding of the significance of individual differences and the provision of opportunities from elementary school through college, which will enable each child to derive the fullest benefit from the educational process. Improvement in education requires changes in curriculum and techniques of teaching. To this end, adjustments in programs of study in the elementary, junior high, and high schools have been proposed here to provide a more useful and meaningful education to slow, average, and gifted children.

It should be emphasized that education is a dynamic and complicated process. Continuous appraisal and evaluation of its goals, functions, and achievements must be undertaken by citizens' groups and groups of educators, if it is to be of the greatest service to the individual and the community.

Finally, let us not forget what Emerson has said: "The true test of a civilization is not the census, nor the size of cities, nor the crops, but the kind of man that the country turns out."

Melvin Regains His Self-Respect

LILLIAN R. HINDS
Director, Arizona Reading Improvement Center
Phoenix, Arizona

MELVIN hoped that things would be different in high school. He had passed from one grade to the next, each year pining to distinguish himself just once in something. But year after year he was a nonreader, the "class dumbbell," who could command attention only by sassing the teacher or by making "smart-aleck" remarks. He was not content to be the "boy in the back row." He had a great inner yearning that would not allow him to sit back unnoticed.

When the reading-center teacher studied the lists of incoming freshmen and their reading scores as compared with their differential-aptitude scores, she selected Melvin as a candidate for the reading center.

When Melvin and his parents were notified of his eligibility to enroll in the developmental-reading course, which gave one solid credit for the year, Melvin registered with alacrity. Nevertheless, he was disturbed over the possibility that he was beyond help. He wondered whether or not his pride could permit him to co-operate, for if he really gave the course everything he had to offer and still failed, what then?

The Reading Center

Melvin swaggered into the classroom with a sneer on his face. Flippant quips lurked behind his fearful yet hostile lips. He quieted down a bit when no one greeted him with a superciliously lifted eyebrow. He was reassured somewhat by the quiet, friendly, accepting manner of the reading-center teacher. Something elusive about her just missed looking or acting as the "teacher" he had learned to know and resist.

First, each of the twenty members of the class was given both written and oral tests. Then each one was run through a vision-screening-test battery.

Melvin learned that he vocalized and moved his head when he read. His reading-test score was fourth grade and one month, but there were preprimer words that he could not recognize. He found that his functional visual skills were deficient and that he was not using his two eyes together properly. First, he would see through one eye and, then, through the other. Sometimes he would use both eyes, but independently—i.e., without proper fusion.

Melvin found it difficult to try to learn, to listen, and to apply some of the newly taught how-to-study skills and techniques. One hour each day, during his reading class, he tried to apply new techniques. He mulled over the thought-provoking questions and statements projected by his reading-center teacher.

Insights into Self

In the midst of seeing the motion picture, "Feeling of Hostility,"[1] Melvin sud-

1. Released in the United States by McGraw-Hill Book Co., 1951.

denly began to understand why, without having been aware of it, he had resisted learning.

Some of the message of the film, "Readers All, Citizens All,"[2] penetrated and helped Melvin to understand part of his early failure at the beginning-reading level. Information gleaned from the psychological films helped him to begin to understand why he felt and acted as he did. He began to realize that his behavior was merely a symptom of deep inner needs and longings.

Thrill of Success

All at once, Melvin felt a peace of mind that he had not experienced previously. Almost without awareness, he began to thrill at the first glimmer of success in recognizing and remembering basic sight words. Following the directions of the Fernald (kinesthetic) Method, he traced the word on the large cursive form.

He reviewed his growing card file of newly mastered words. He felt the flush of warmth as his reading rate rose from 110 words per minute to 125, and then to 200 words per minute. He felt a glow of pride when he could see five digits flashed at one one-hundredths of a second, remember them, and write them correctly.

Each morning, instead of wishing he could sleep all day and avoid facing the nightmare of endless nonachievement, Melvin rose early so that he could skim over the day's news. He chuckled as he clipped out a humorous article on which to report to his reading class.

He wondered, with no little gratitude, why his English teacher suggested that he write his book report on one of the books in the reading center's collection of simplified classics, instead of on a higher-grade-level book.

Melvin did not resent, as he once might have, the fact that the reading-center teacher must have communicated with his English teacher in an effort to smooth the way somewhat. He worked in the skill-building booklets which helped him to read for main ideas and for details, which helped him to apply study skills and to build his vocabulary. He was scrupulously honest with himself, as he scored his own lessons. He took the answer "key" from the steel file and carefully replaced it when he was finished scoring his lessons.

Melvin often wondered why more teachers did not trust students to grade their own papers. He admitted to himsel that helping to evaluate the quantity and quality of his own work made the term and semester grades more meaningful. He realized that he alone held the power to achieve or to fail. Moreover, he realized that evaluation began with what he was and measured how he progressed, rather than with what his parents and teachers thought he should be and how they thought he should progress.

As Melvin began to apply information about the sounds of letters and their relationship to each other, and as he began to apply a few simple rules for figuring out certain kinds of strange new words, he felt a new surge of confidence.

At first, Melvin had been critical of his teacher's insistence that the class assume responsibility for class order; that the class president and class members learn parliamentary procedures; that the class secretary take roll and summarize the day's activities. However,

2. Filmed by the Audio-Visual Department, Central High School, Phoenix, Arizona.

as he began to flex his still-dependent, still-soft muscles of self-reliance, he began to see the wisdom of the slower, but more meaningful, development of self-discipline and responsibility.

A Way of Life

By the end of the year, Melvin was reading for pleasure on a nightly basis. "Reading is the one addiction of which 'she' approved," he remarked once with a grin, remembering the phrase used by the reading-center teacher.

Reflecting on the change in himself as a person, Melvin realized that he had not enrolled in just a class; he had enrolled in a way of life.

Administrators need to understand that continuous nonachievement affects the personality as deeply and critically as tuberculosis or other incapacitating illness affects the body. To teach reading effectively, the reading-center teacher must be encouraged to teach mental health effectively. She must be encouraged to develop some insight into self and self-acceptance. She must be prepared to accept that self which the student brings to class.

The criteria for success of the reading center are measured by the personal growth of the student, by his ability to face and accept his shortcomings, and by his emotional freedom to meet the challenge. They are not measured by the goose step of folded hands on desks, neat papers on the walls, and subservient, scared faces cowed into external, absolute classroom silence.

Other students find self-esteem and make reading progress in a less direct and less spectacular manner than did Melvin. Nevertheless, with proper guidance, each one can find his own salvation.

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Teaching Reading by Television

LYMAN C. HUNT[1]
Director, The Reading Center, The Pennsylvania State University
University Park, Pennsylvania

As television is used increasingly for educational purposes, attention will center on the changing role of the classroom teacher. Teachers, as individuals and as a professional group, will have a responsibility for studying this great force, this awakening giant in education, television. Educational television will need to be studied not only as it may affect quality in education, but also as it may affect the teacher's role in maintaining this quality.

Some, but not many, commercial television programs for children and adults have educational content of value. Much of educational television designed for children or elder students can also provide something in the way of educational diet for the general public. But what about the teacher? Is the teacher television's forgotten audience?

In the important area of reading, there have been several experimental efforts to instruct children by television, but very little has been done on television for the teacher of reading. Should we have educational television for teachers as well as for children? Should not part of our educational-television effort be directed toward the concerns of teachers? Are not teachers important persons in the educational process?

An extensive study designed to examine these and related questions was launched by the Reading Center of The Pennsylvania State University in the fall of 1959. The study was designed specifically to examine the effectiveness of a series of televised programs on reading instruction in the elementary school. A nearby commercial station agreed to telecast the series, which consisted of nineteen half-hour programs presented by teachers from the local schools.

Each teacher worked with children from her own classroom, presenting different phases of her reading program. Sizable groups of teachers agreed to participate in the study, because television made it possible for large numbers of teachers to view the programs.

The purpose of the televised series, as it was conceived, was one of teachers helping teachers, of teachers extending their knowledge and experience to other teachers.

Can television assist teachers? Perhaps the answer depends to a large extent on the ideas and concepts of reading instruction which were presented through the program series.

The Concept of Instruction

A well-conceived theory of reading instruction provides the kind of instruction that will satisfy each child's particular needs and that will permit him to grow in accordance with his own abilities and developing interests. In

1. Dr. Hunt was assisted in the preparation of this article by the following people: Phyllis Parkin, Lois Bird, Lorraine Harvilla, and Christopher R. Mare.

such a reading program, much freedom is given to the individual child—freedom to choose materials to read; freedom to set a comfortable, self-determined pace; and freedom to assume responsibility for what is learned in his reading.

A wide selection of reading materials is fundamental to such a reading program. Each child must be free to choose materials which he most wants to read. Experience testifies that the child usually is well qualified to choose books which most adequately meet his current needs. If he is searching for a special type of story, or if he is experiencing difficulties with reading, the teacher will help him to make a satisfying choice.

Once he has selected a book, a child will find a comfortable spot and will read at his own rate of speed. It is no longer necessary for the eager, rapid reader to wait for others to finish before he moves on to new material. On the other hand, the child who reads in a slow, laborious manner, who seldom finishes any story because the group cannot wait, is no longer subject to pressure. At last, he is able to finish some stories he starts. He is able to think more about his reading and less about holding up other children.

If a child comes to an unkown word or if he meets an incomprehensible idea, he may ask for help from the teacher or from a near-by friend. He may jot down new words on the vocabulary list which he keeps for independent word study.

When he finishes a book, a child records the name of the book, its author, and a personal reaction to the book, or a thumbnail sketch of the story, or both. The teacher, in this type of program, keeps a simple but accurate record of what each child is doing. File cards or a notebook are good for this purpose.

The individual conference, with its important interaction between teacher and child, forms the nucleus of the reading program. Conversations with each child about books read or being read are held frequently. Through this personal relationship, the teacher can keep pace with each child's progress and can guide his further development. Of course, she works most often with children who need the most help.

Skillful questioning forms the basis for the individual conference. The teacher must be able to ask meaningful, searching questions. Through her skill and insight in questioning, she learns whether or not the child is understanding what he reads; whether he is gaining new and important ideas; whether he is deciding if the story is real or fictional in nature; whether he is identifying with the people in the story; and whether he is relating experiences and events to those of his own life.

During the individual conference, the teacher may check vocabulary by asking the child to identify words with which he is having difficulty and by listening to the child read selected paragraphs. By having the child read to her a humorous passage or an incident of special appeal, the teacher may observe and record specific difficulties which the child is experiencing. She then may provide the necessary assistance. If she finds other children in the class with the same or similar difficulties, she may group them temporarily to give them the help which they need.

Nothing seems to increase the desire to read and write so much as the sharing of reading adventures with one's friends. Book-sharing time may be a time to exchange humorous incidents, a time to tell about interesting characters,

vivid descriptions, or exciting events. A lively discussion sometimes develops because of differences of opinion. It may be the time when a child asks a friend or two to read with him, as they share the reading of the same story, or retell a well-loved story.

Some children prefer to share their reading creatively, perhaps by making a mobile, by constructing a crossword puzzle, by drawing or painting pictures, or by making their own picture stories. Creative writing may take the form of a story, a poem, a play, or a puppet show.

The teacher who conducts this type of reading program has many responsibilities. She must provide a great variety of materials for children to read. She must be able to guide them in their choices and, at the same time, be able to leave them essentially free to make their own selections. She must be able to recognize and provide for the great differences in ability, which her children will evidence. From listening and questioning, the teacher must be able to evaluate progress, assess difficulties, and provide the necessary remedial assistance. Finally, through meaningful related activities, she must provide the child with experiences which will aid him in integrating reading experiences with his own life experiences.

It was this conception of a reading program which the television teachers endeavored to portray through the series of programs. Each teacher, in his or her unique way, illustrated segments of the total program described in the preceding paragraphs. If seen as a whole, the nine hours of film resulting from the series could convey a total impression of this well-conceived reading program. Certainly a great many practical helps for teachers were presented. The testimonies of a great many teachers substantiate this statement. It is, therefore, easy to gain a personal conviction about the worth or value of the series for the teachers.

Much information was collected before, during, and after the televised presentations on reading instruction. This data is now being analyzed through a multitude of exhaustive studies. It is too early to tell whether or not the statistical scrutiny will bear out the personal testimony of teachers. Regardless of the outcome, however, the study was necessary in the search for answers to the question: What is the role of the classroom teacher in the area of educational television?

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What Are We Teaching in Social Studies and Science?

DONALD L. BARNES
Associate Professor of Education, Ball State Teachers College
Muncie, Indiana

In the heat of argument surrounding present controversies over curricular offerings in American schools, zealots on all sides frequently resort to sweeping statements based upon limited observations.

The two national surveys reported in this article were conducted in an effort to piece together a more accurate picture of current offerings in social studies and science in cities and towns throughout the United States. Sixty-two cities in forty-two states from Maine to California co-operated in the study.

Social Studies

Completed tabulations in social studies reveal that there is much similarity among the programs on various grade levels. Programs begin with studies of people and things close at hand and expand as children's interests expand. The percentage of school systems offering each topic at each grade level is as follows:

Grade One: Family, 30 per cent; Home, 84 per cent; School, 82 per cent; and Other, 16 per cent.

Grade Two: Community, 42 per cent; Neighborhood, 44 per cent; Community Helpers, 44 per cent; and Other, 20 per cent.

Grade Three: Indians, 22 per cent; Pioneers, 10 per cent; Food, 24 per cent; Shelter, 24 per cent; Clothing, 26 per cent; Transportation and Communication, 22 per cent; Our City, 68 per cent; and Other, 18 per cent.

Grade Four: Our State, 40 per cent; and Beginning Readiness for History and Geography, 78 per cent.

Grade Five: United States, Past and Present, 90 per cent; Western Hemisphere, 12 per cent; and Other, 4 per cent.

Grade Six: Old World, 42 per cent; Other Nations, 42 per cent; Eastern Hemisphere, 12 per cent; and Other, 14 per cent.

Grade Seven: U. S. Geography, 24 per cent; World Geography, 48 per cent; State Geography, 24 per cent; State History, 26 per cent; and Other, 24 per cent.

Grade Eight: U. S. History, 82 per cent; Citizenship, 14 per cent; and Other, 16 per cent.

Grade Nine: World Geography, 18 per cent; World History, 26 per cent; Civics, 58 per cent; and Other, 8 per cent.

Grade Ten: World History, 88 per cent; World Geography, 28 per cent; and Other, 4 per cent.

Grade Eleven: U. S. History, 82 per cent; Sociology, 10 per cent; Government, 16 per cent; and Other, 27 per cent.

Grade Twelve: Economics and/or

Sociology, 54 per cent; Government, 60 per cent; and U. S. History, 26 per cent.

In the absence of a centralized governmental control agency similar to those found in European countries, it is surprising to find such great similarity among the offerings in the various school systems. A partial explanation of the phenomenon may lie in the fact that most large publishers in the United States enjoy nation-wide distribution of their school-texts—a reflection of common values held by citizens throughout the country.

Approximately 90 per cent of the cities in the study indicated that they used the unit method in teaching social studies. The units incorporated panels, group and committee work, films, pupil-teacher planning, audio-visual materials, and trips through the city or area in which the school was located. Most units consisted of an introduction, a study or mastery period, and an evaluation period. The length of units varied from two to six weeks.

Science

The cities surveyed also reflected similarity among their science offerings on each grade level. All of the school systems inaugurated their science programs at the first-grade level. The topics under common headings appeared as follows:

Grade One: Living Things, 88 per cent; The Earth, 76 per cent; The Universe, 40 percent; Natural Forces, 67 per cent; Machines, 58 per cent; Physical and Chemical Changes, 27 per cent; and Other, 5 per cent.

Grade Two: Living Things, 85 per cent; The Earth, 80 per cent; The Universe, 42 per cent; Natural Forces, 45 per cent; Machines, 33 per cent; and Physical and Chemical Changes, 27 per cent.

Grade Three: Living Things, 88 per cent; The Earth, 79 per cent; The Universe, 54 per cent; Natural Forces, 45 per cent; Machines, 54 per cent; Physical and Chemical Changes, 21 per cent; and Other, 1 per cent.

Grade Four: Living Things, 79 per cent; The Earth, 76 per cent; The Universe, 82 per cent; Natural Forces, 61 per cent; Machines, 37 per cent; Physical and Chemical Changes, 24 per cent; and Other, 6 per cent.

Grade Five: Living Things, 88 per cent; The Earth, 85 per cent; The Universe, 39 per cent; Natural Forces, 54 per cent; Machines, 46 per cent; Physical and Chemical Changes, 45 per cent.

Grade Six: Living Things, 60 per cent; The Earth, 85 per cent; The Universe, 67 per cent; Natural Forces, 64 per cent; Machines, 45 per cent; Physical and Chemical Changes, 36 per cent; and Other, 18 per cent.

Grade Seven: General Science, 70 per cent; Other, 21 per cent; no course, 9 per cent.

Grade Eight: General Science, 85 per cent; Other, 12 per cent; no course, 3 per cent.

Grade Nine: General Science, 87 per cent; Biology, 18 per cent; and Other, 12 per cent.

Grade Ten: Biology, 100 per cent; and Other, 21 per cent.

Grade Eleven: Physics, 76 per cent; Chemistry, 64 per cent; and Other, 42 per cent.

Grade Twelve: Chemistry, 76 per cent; Physics, 70 per cent; and Other, 45 per cent.

Forty-two per cent of the schools re-

porting indicated that, where possible, science was correlated with other subjects, particularly with social studies. Six per cent of the schools surveyed indicated that they had no formal course of study for science, but provided a source book of science experiences to be used in the development of the core areas.

The data collected did not indicate whether science was taught as a method of investigation or simply as a study of natural phenomena. The study of living things received the greatest stress up through the fifth grade.

Conclusions

Much has been said about life-adjustment courses in the social-science curricula and about watered-down science courses in flycasting or photography. The present survey failed to uncover evidence of degenerate curricular offerings. Simple physics, chemistry, and biology have been added to the curriculum, along with jets and rockets, beginning at the sixth-grade level. It might be concluded that our curricular offerings have remained far too stable over recent years of rapid change.

Books must follow sciences, and not sciences books.

—Francis Bacon

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Leaders in Education XXVIII

WILLIAM H. BRISTOW

WILLIAM HARVEY BRISTOW graduated from Warrensburg (Missouri) State Teachers College in 1920, but his career as a teacher and administrator began four years earlier in a classroom in Breckinridge, Missouri.

Dr. Bristow rose through the educational ranks as school principal in towns in Missouri, Oklahoma, and Pennsylvania; as assistant director and, then, director of secondary education in the Pennsylvania Department of Public Instruction; and as deputy superintendent and director of the curriculum bureau of this department, a position which he held until 1936.

In the meantime, Dr. Bristow managed to earn his master's and doctor's degrees from Columbia University and to teach during summer sessions at several well-known universities.

He served as general secretary of the National Congress of Parents and Teachers, from 1936 to 1938, and as supervisor of the Training School at State Teachers College in Mansfield, Pennsylvania, in 1939. During the next two years, he was dean of instruction at the State Teachers College in Shippenburg, Pennsylvania.

In 1940, Dr. Bristow came to the New York City Schools as assistant director of the Bureau of Reference, Research, and Statistics. In 1949, he assumed his present position as director of the Bureau of Curriculum Research in New York City.

Dr. Bristow is a member of the National Education Association and many of its departments. He also is a member of many other professional and civic organizations.

This active and capable educator has written many curriculum and research studies, has edited countless courses of study and materials, and has contributed articles to numerous educational journals and yearbooks.

With his broad background in teaching and research and with his tremendous capacity for planning, organizing, and administering, Dr. Bristow is a nationally recognized authority on the subject of curriculum development.

WHAT SCHOOLS ARE DOING

In-Service Education

GUY WAGNER
Director of the Curriculum Laboratory
Iowa State Teachers College, Cedar Falls

In recent years there has been an increasing national interest in on-the-job improvement programs for teachers (commonly known as "in-service education"). Local school faculties have participated in a wide variety of activities which often have had three functions: (1) the professional growth of teachers; (2) the production of valuable teaching materials; and (3) the co-ordination of school-wide policies.

A study of successful in-service programs suggests the following ideas which may serve as guidelines for local action:

1. As teachers become excited about improving their own professional stature, they are more likely to transmit an enthusiasm for learning to their pupils.

2. Co-operative participation with fellow teachers on in-service projects is often a valuable learning experience. Equally important, teachers learn group techniques which they can put into operation in the classroom.

3. Setting up local educational goals is a highly important in-service project. For, as each teacher clearly perceives the major purposes of the school and the specific objectives of his own classes, he develops an equally clear blueprint for the work ahead.

4. Teachers should expect to do professional reading and action research as part of their regular work. Nevertheless, the local community, through its board of education, can strengthen in-service programs by providing time and funds in such areas as preschool workshops and curriculum construction.

5. Individual teachers, as well as the school in general, should concern themselves with yearly evaluations of what they set out to do. To what degree do outcomes measure up to goals?

Good references are as follows:

Association for Supervision and Curriculum Development. *Leadership for Improving Instruction* (Washington, D. C.: National Education Association, 1960).

Bent, Rudyard K., and McCann, Lloyd E. *Administration of Secondary Schools* (New York: McGraw-Hill Book Co., Inc., 1960), Chap. 5.

Boyer, L. E. "In-Service Teacher Programs," *Pennsylvania School Journal* (February, 1960), p. 241.

Harrison, Raymond H., and Gowin, Lawrence E. *The Elementary Teacher in Action* (San Francisco: Wadsworth Publishing Co., Inc., 1958), Chap. 15.

Lewis, Claudia, and Winsor, Charlotte B. "Supervising the Beginning Teacher," *Educational Leadership* (December, 1959), pp. 137-141.

Porter, Willis P. "Teachers on the Job," *Childhood Education* (November, 1959), pp. 117-121.

Taylor, Bob L. "Factors Influencing In-Service Teacher Education Programs," *Journal of Educational Research* (May, 1959), pp. 336-338.

VIEWPOINTS

What Does the World Need? (Part II)

EARL H. HANSON
Superintendent of Schools, Rock Island, Illinois

If a crazy man gains access to the go-to-war telephones, either at the Strategic Air Command bases of the United States or at their opposite numbers in Russia, the world will go to war—to hot war!

Recently I visited the headquarters of the Strategic Air Command at Offut Air Force Base, along with about twenty-five other citizens, at the invitation of the United States Air Force. There was no suggestion that what we saw and heard was "classified" as secret. Hence, I would say that, from what we did see and hear at SAC headquarters, the forces of both sides are so poised that if one strikes, the other will strike automatically, too.

The situation is like that of two men facing each other with loaded revolvers, the triggers of which are connected. If one man pulls his trigger, he automatically pulls the other trigger, also.

I was frightened when the commanding general of SAC went to the go-to-war telephone and announced that our forces, planes, and missiles from all over the world would be launched immediately if he spoke the proper phrase. Needless to say, I was relieved when all he said into the telephone was, "This is a test check."

I do not think that we shall have a crazy man lift our telephone, but after watching Krushchev's performance on television after last June's summit breakup, I can not be sure that there are not some crazy people fairly close to the go-to-war telephones of other nations.

What does all of this mean? First, it means that neither side will go to war willingly, because each knows that there can be no winner. The lights of the whole world—not just those of the defending forces—will be blown out. The instinct of self-preservation once made war—i.e., men fought one another for food; they fought to preserve life. Now, however, the same instinct operates to prevent war.

Second, it means that if we are to be truly safe, we must reduce the tensions of the world. We must diminish hate. Our creed—that we all are equally brothers and sisters under the fatherhood of God, that we all are equally and sacredly important—must be the creed that prevails. If it does prevail, tensions will be reduced, hates will be lessened, and the atmosphere will become such as is necessary for the rearing of people in sanity instead of in insanity.

Certainly now, if never before, the verses of the Thirteenth Chapter of First Corinthians are so true that they mean the difference between life and death for us—"And now abideth these three, Faith, Hope, and Love; and the greatest of these is Love."

THE EDUCATIONAL FRONTIER

The Role of College Men

FRED G. WALCOTT
University of Michigan, Ann Arbor

I AM annoyed daily by the tendency of many college men to drag their feet on plans for expansion. A college president needs only to be quoted in a newspaper on the pressing problems of preparing for doubled enrollments by 1970, for the whole college to go into an ant-hill frenzy of alarm and protest.

I know of two new colleges that are now trimming a neat little hedge of respectability, while students clamor at their gates. With an obvious prospect of two thousand students, the leaders of these institutions propose to freeze enrollments at about five hundred.

As I see it, the motives of these cautious men are royalistic. They believe in an educated elite, in a chosen few, who, possessing knowledge, will save the world. The present surge of the people toward more, different, and better education threatens the classic dream of distinctive quality which these college men cherish. They see in this same surge an opportunity to insure quality if selection can be tightened while the line is held on numbers.

It is certainly true that public colleges often have been harassed terribly by the parsimony of legislatures. Nevertheless, it is appalling to see college men join the conspiracy of restraint in order to gratify foolish utopian dreams. We witness not only an exploding population, but also an expanding culture. The advances of this century already surpass in scope the achievements of the past thousand years.

One fact is as clear as day: the era of the strong back and the weak head is gone forever. Atom-powered machines soon will make possible our most imaginative dreams. The most marketable traits of tomorrow will be technological know-how, realistic imagination, philosophical wisdom, and frontiering spirit.

The problem of our day is to dream on a large-enough scale, to confront our expansive future realistically, and to seize our opportunities with happy courage and energetic zeal. It is the day of the "possumist"—of the one who can "make possible," of the one who shouts, "I can."

Furthermore, it is the day of the educated mind, the mind with know-how. We must fill the vacuum of the vanished physical labor with practical intelligence and technical skill.

The needs of this great day will not be served by a few. They will involve the total mind and movement of the mass. In such a time, the role of college men is most strategic. Theirs should be the prophetic voice—warning, exhorting, admonishing. It is a time to think big, to plan liberally, to expand confidently. It is a time for pioneers.

BOOK REVIEWS

WILLIAM P. SEARS, Jr., Book Review Editor
New York University School of Education
Washington Square, New York City

THE EDUCATION OF AMERICAN BUSINESSMEN. By Frank C. Pierson and Others. New York. McGraw-Hill. 1959. $7.50.

Here is a most comprehensive and extremely intelligent study of contemporary American business education. As such, it should be read, marked, learned, and inwardly digested by those charged with the development of curricula in the various areas of business education on the college and university levels. Attention throughout is placed on the key issues in the field today and on trends that are well marked. Present admission requirements are studied, as are study programs and scholastic standards. Student abilities are sharply examined and the broader aspects of career requirements are surveyed. Materials for the study were secured by questionnaires and personal interviews. Both universities and employer groups furnished the data from which the findings emerged.—W. P. S.

THE NATION'S CHILDREN. Edited by Eli Ginzberg. N. Y. Columbia University Press. 1960. Three volumes. $4.50 per volume.

These three volumes are "musts" for every professional educator. The content of these volumes was determined by a group of top men in such fields as education, religion, medicine, psychology and anthropology brought together by Dr. Eli Ginzberg and prepared for the more than 7,000 delegates of the 1960 White House Conference on Children and Youth. Volume One comprises essays on the family and social change. The second volume examines the development and education of children and youth. Volume Three looks realistically at present problems and ahead to the future. The essays are brief, cogent, and crisply written.—W. P. S.

THE GENERAL EDUCATION CLASS IN THE SECONDARY SCHOOL. By Louise E. Hock and Thomas J. Hill. New York. Holt, Rinehart and Winston. 1960. $6.00.

Here is a book that will challenge and inspire practical school people. It undoubtedly will lead to changes in school practice and to much improvement in the education of all of the children of the secondary school. As described by the authors, the general-education class in the secondary school is an approach to vital content growing out of the social realities of our times, our democratic values, modern psychological theory, and what we know of the adolescent and his needs. The purpose of such a class is almost celestial—"the maximum development of each young person as an intelligent individual in his own right and as a mature citizen in his relationships with his fellow man."

—W. P. S.

EARLY CHILDHOOD EDUCATION. By Hazel M. Lambert. Boston. Allyn and Bacon. 1960. $5.95.

This volume has been designed to be of help to the student preparing to be a primary-grade teacher as well as to the seasoned teacher who wishes to review some of the newer practices in the field of teaching young children. The author stresses the importance of the child in the learning situation and the child as learner. It is from these basic considerations that method is developed. The abundent material presented will cause readers to understand the "why" as well as the "what" of teaching primary-grade youngsters. As a text, the volume is completely constructed—the discussion is clear and forthright.

—W. P. S.

Coming in the November EDUCATION

Featuring the subject of "The Gifted," next month's EDUCATION will contain many outstanding articles on this subject.

The following list includes a few of them:

Guest Editor: *Calhoun C. Collier*, Chairman, Department of Elementary Education, College of Education, Michigan State University, East Lansing, Michigan

Schools and Community Work Together, *Arlene S. Eherts*, Gifted Child Counselor, and *B. Miller Eves*, Co-ordinator, Exceptional Child Program, Volusia County Public Schools, Florida

Cluster Grouping, *Donald J. Kincaid*, Supervisor, Guidance and Counseling, and *Thelma M. Epley*, Consultant for Gifted Pupils, Los Angeles City Schools, Los Angeles, California

A Canadian Plan, *R. E Jones*, Inspector of Special Education, Toronto, Canada

When Schools and Parents Share Their Knowledge, *Mrs. Forrest E. Rieke*, Housewife and Mother, Portland, Oregon

CHAP: Canton's High-Ability Program, *Arnold B. Cheyney*, Supervisor of Elementary Education, Canton, Ohio

Teaching Critical Thinking, *Stephen O. Krebs*, Teacher-Counselor, West Junior High School, Lansing, Michigan

When They Are Gifted, *Francis R. Link*, Co-ordinator of Secondary Education, Cheltenham Township Schools, Elkins Park, Pennsylvania

Recent Research on the Gifted, *William K. Durr* and *Calhoun C. Collier*, College of Education, Michigan State University, East Lansing, Michigan

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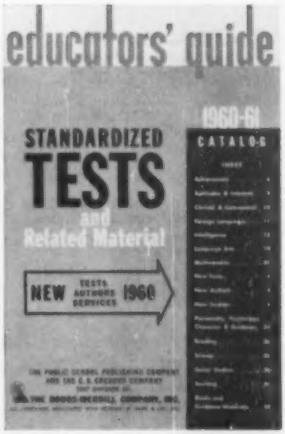

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